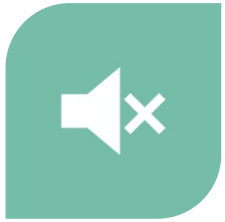
House Keeping

WE WILL BE RECORDING THIS PRESENTATION AND PROVIDING CAPTIONS



PLEASE BE SURE TO MUTE TO REDUCE BACKGROUND NOISE

WE PLAN TO LEAVE TIME FOR QUESTIONS AFTER EACH PRESENTER AND AT THE END OF THE PRESENTATION

YOU CAN TYPE YOUR QUESTIONS IN THE CHAT OR PRESS *6 TO UNMUTE ON THE PHONE






Hello!

- Community members, to save time for your questions, please introduce yourself in the chat and before you ask a question.
  - Tell us what you love about the Lake and what you're most concerned about too.
- Our staff represent different programs and divisions within DEC:
  - Lakes and Ponds Program
  - Monitoring and Assessment Program
  - Watershed Planning Program

Lake Morey Clean Water Community Presentation

Presented by:

Danielle Owczarski, M.S. – Watershed Planner

Kellie Merrell, M.S. – Aquatic Biologist

Mark Mitchell, M.S. – Lakes Monitoring and Community Outreach Coordinator

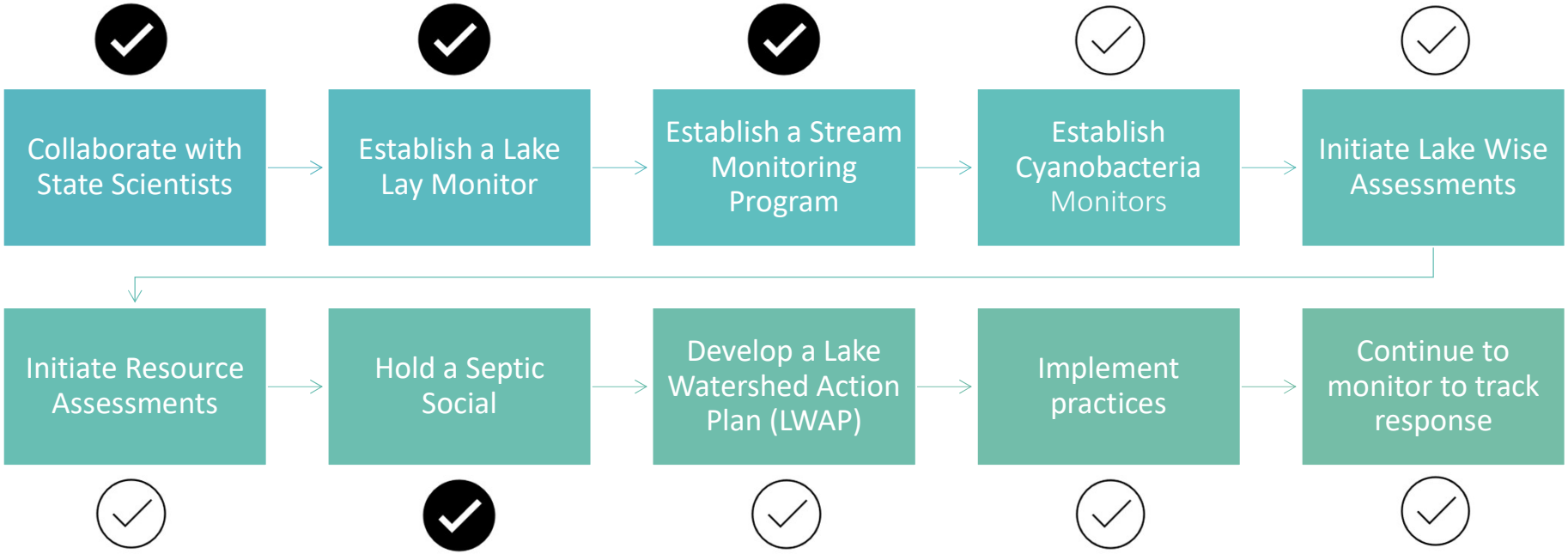
Peter Isles, Ph.D. – Aquatic Biologist

VERMONT
AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

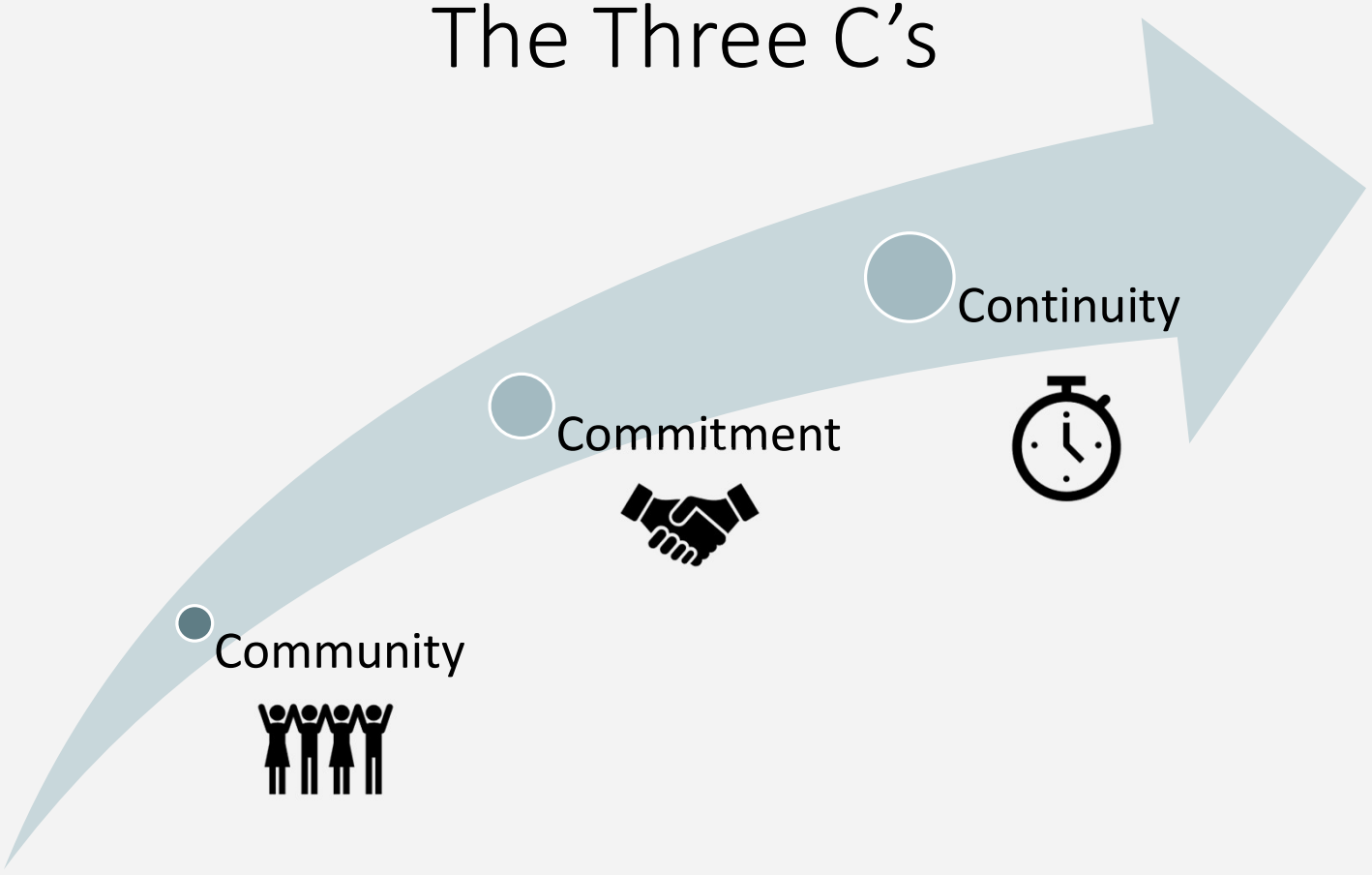
Sea Grant
Lake Champlain

Special thanks to the Lake Morey Commission and the Town of Fairlee for the in-lake and stream sampling efforts

Community Actions for a Healthy Lake



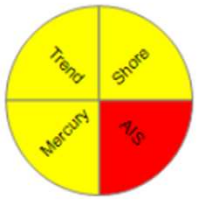
The Three C’s



Lake Score Card (Note: Alum Treatment in 1986)

MOREY - data through 2020

Learn How Lakes Are Scored



Lake Area: 549.8 acres

Basin Lake Area Ratio: 9

Max Depth: 13.1 meters

Mean Spring TP: 21.1 ug/L

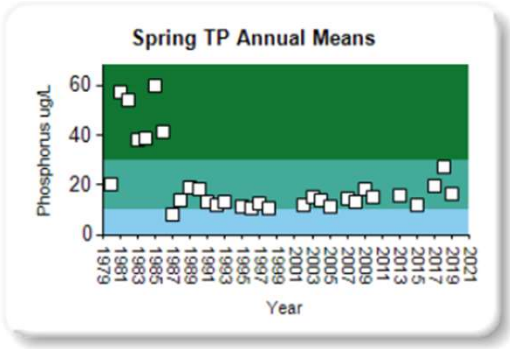
Mean Summer TP: 19.5 ug/L

Mean Summer Chla: 6.4 ug/L

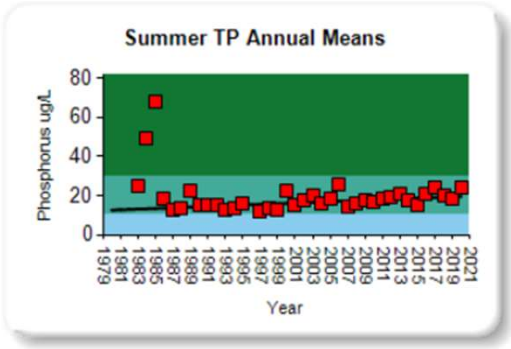
Mean Summer Secchi: 6.4 meters

Hypereutrophic
Eutrophic
Mesotrophic
Oligotrophic

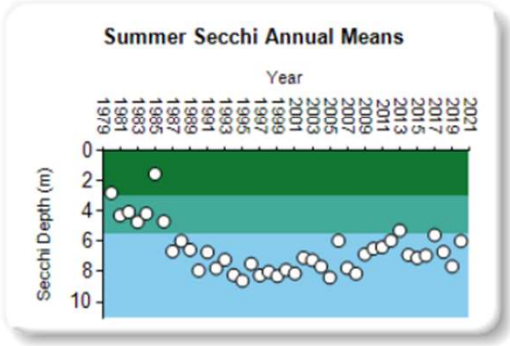
Spring TP Trend: p = 0.1905 | CV = 69
Stable



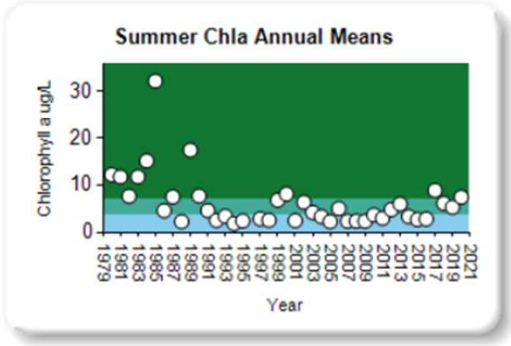
Summer TP Trend: p = 0.0045 | CV = 52
Highly significantly increasing



Summer Secchi Trend: p = 0.6056 | CV = 23
Stable



Summer Chla Trend: p = 0.1865 | CV = 92
Stable



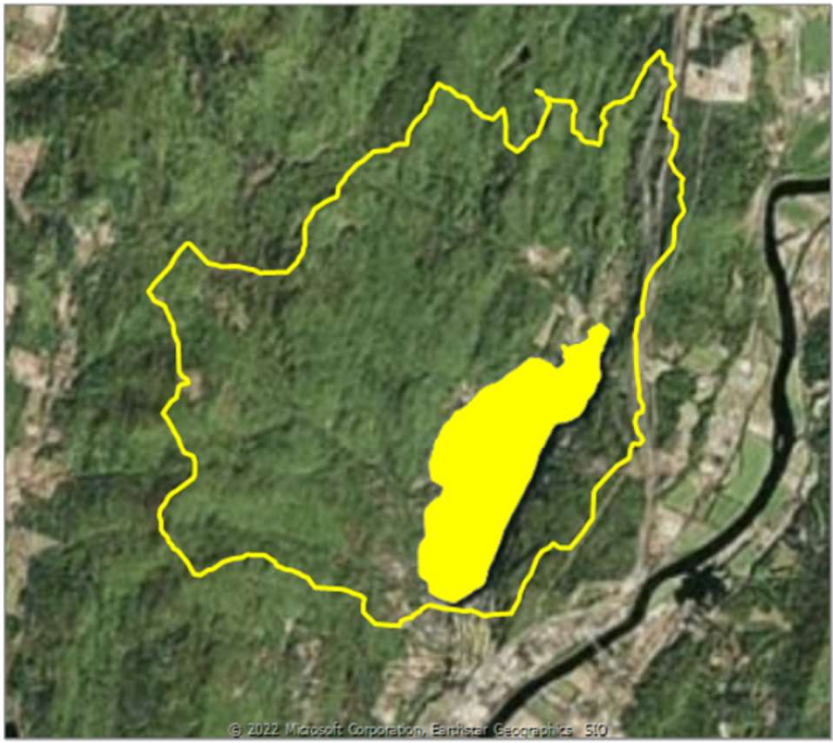
Stresses / Impairments

Stressed -- Phosphorus

Trend Score: Fair

WQ Standards Status: Stressed

Watershed Score: Moderately Disturbed

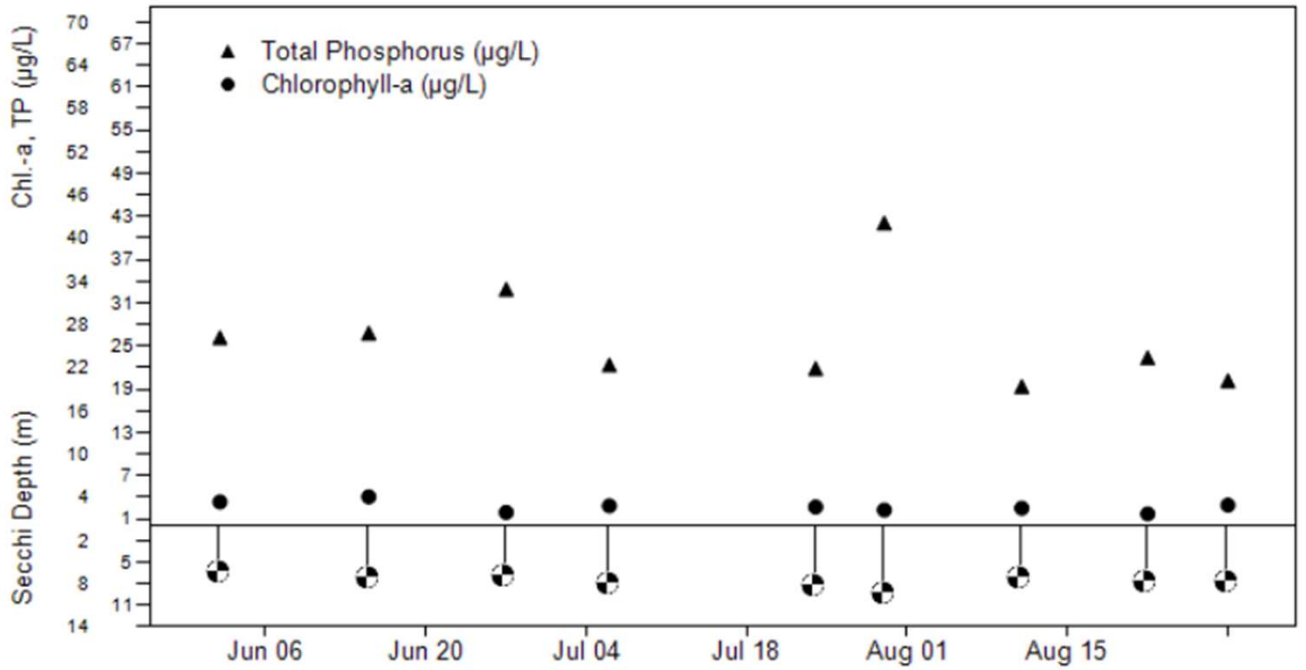


2021 Spring Turnover & Summer Lay Monitoring Program (LMP) Results

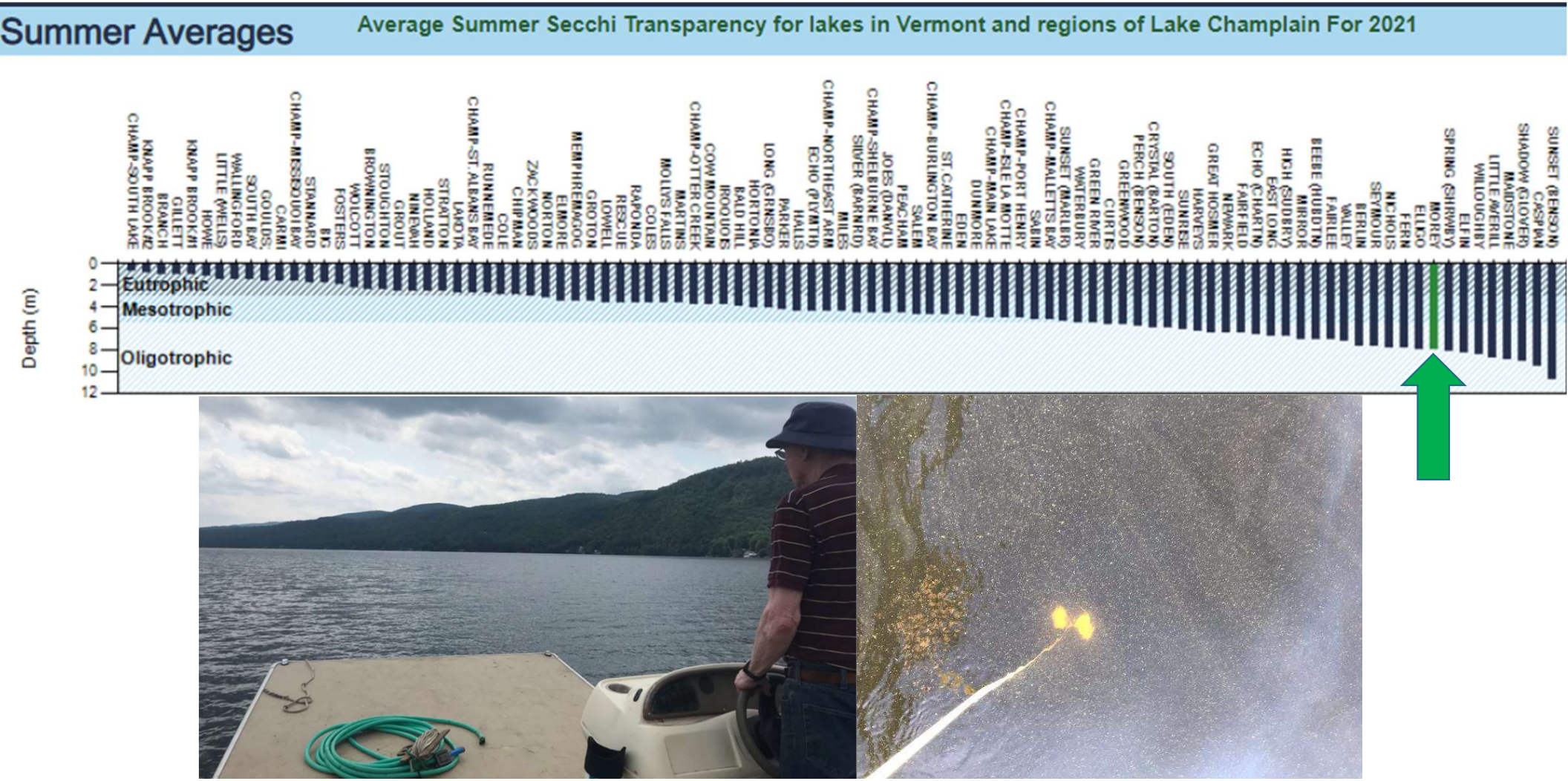
2021 Summary (Station 1)

Parameter	Days	Min	Mean	Max
Secchi (m)	9	6.5	7.9	9.5
Chl-a (µg/L)	9	1.7	2.7	4.1
Summer TP (µg/L)	9	19.4	26.1	42.1
Spring TP (µg/L)	1		22.7	

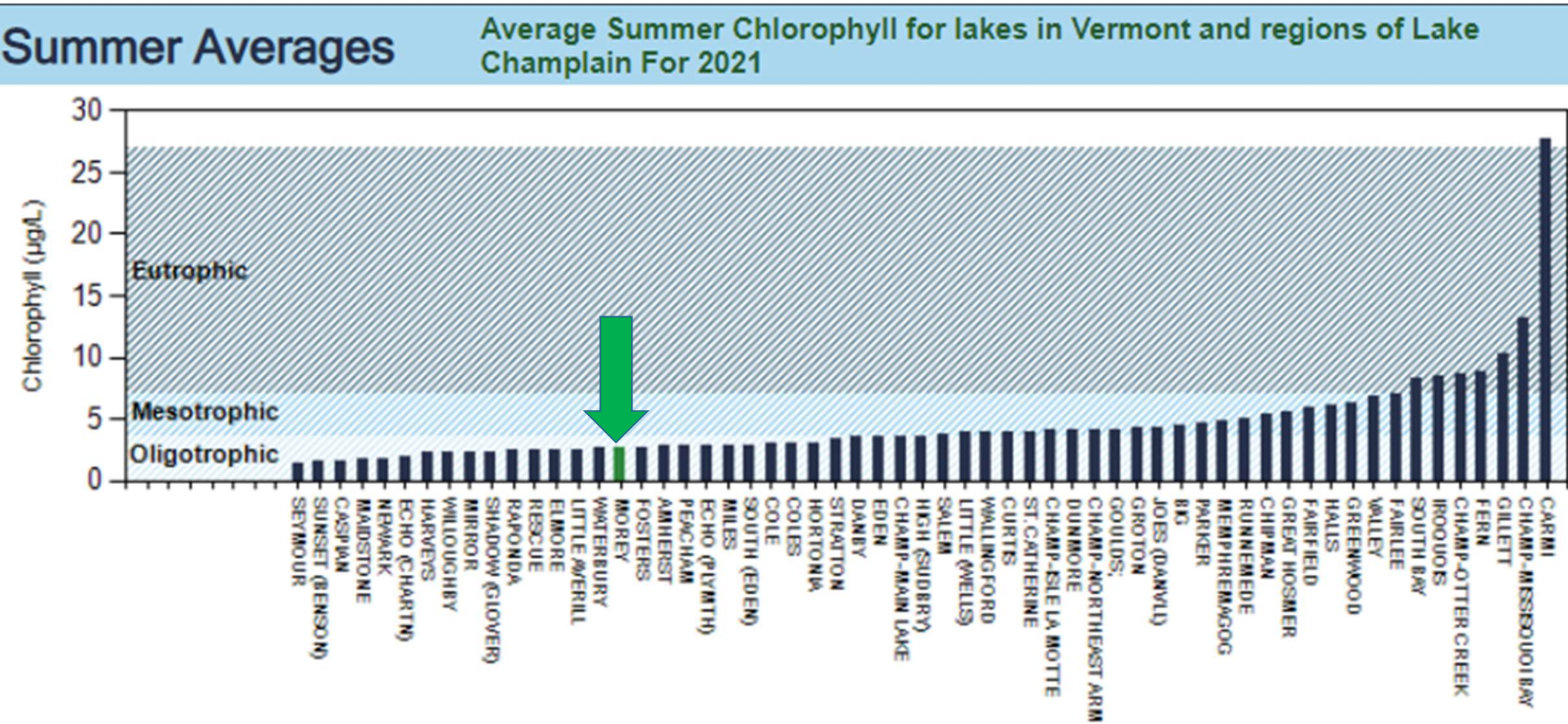
2021 Daily Values (Station 1): Total Phosphorus, Chlorophyll-a, and Secchi Depth



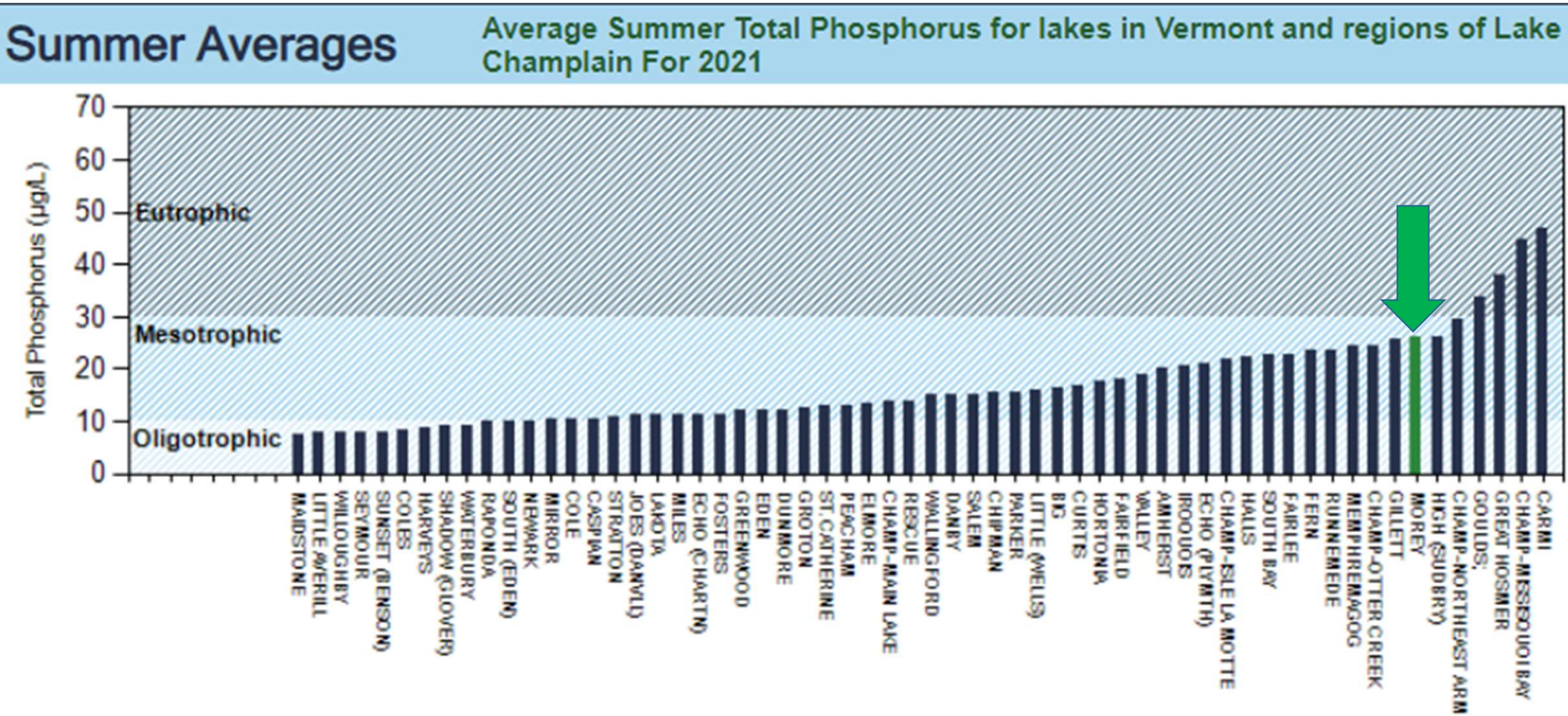
2021 LMP Secchi Depth Comparison for VT Lakes

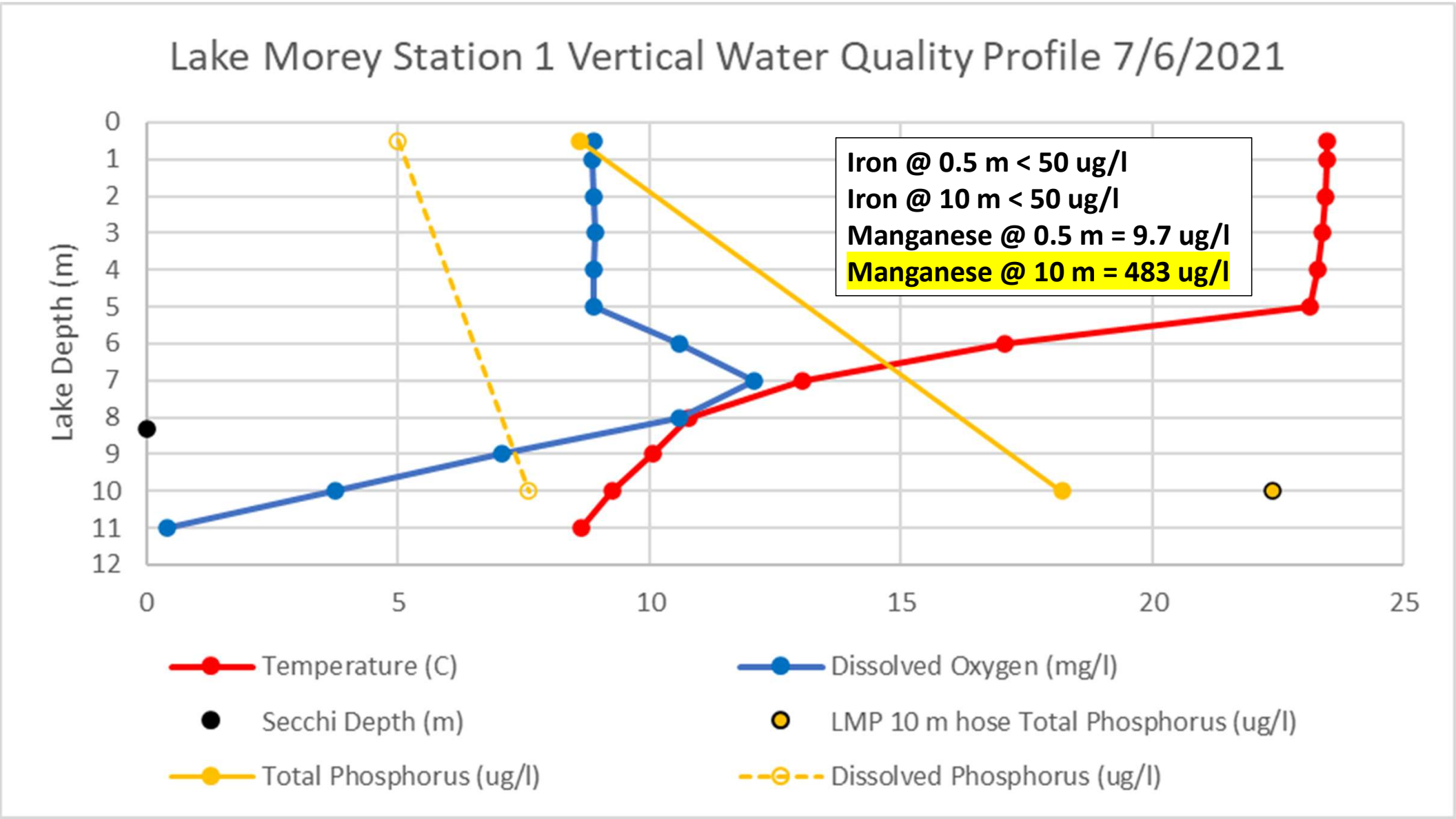


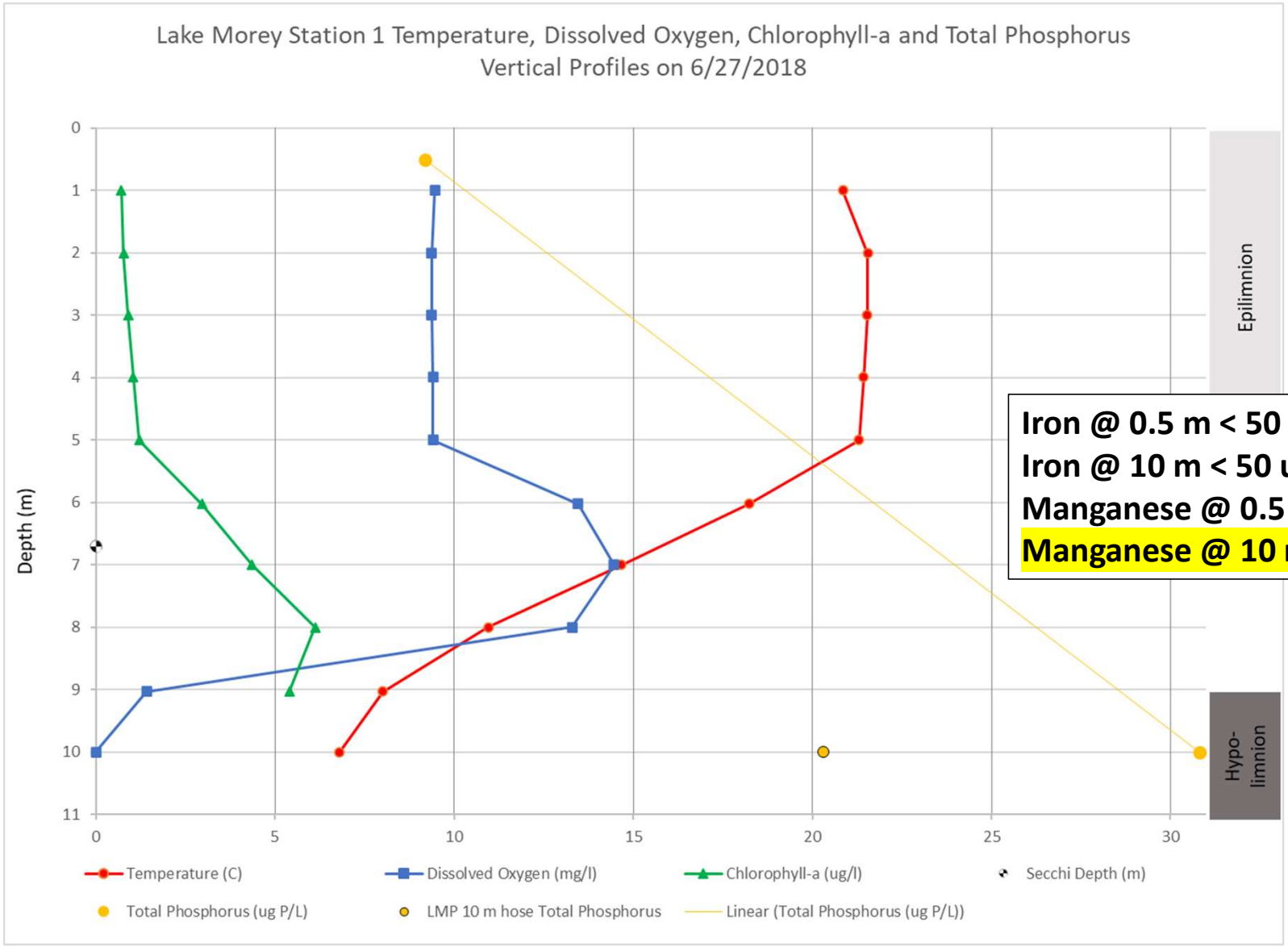
2021 LMP Chlorophyll-a Comparison for VT Lakes



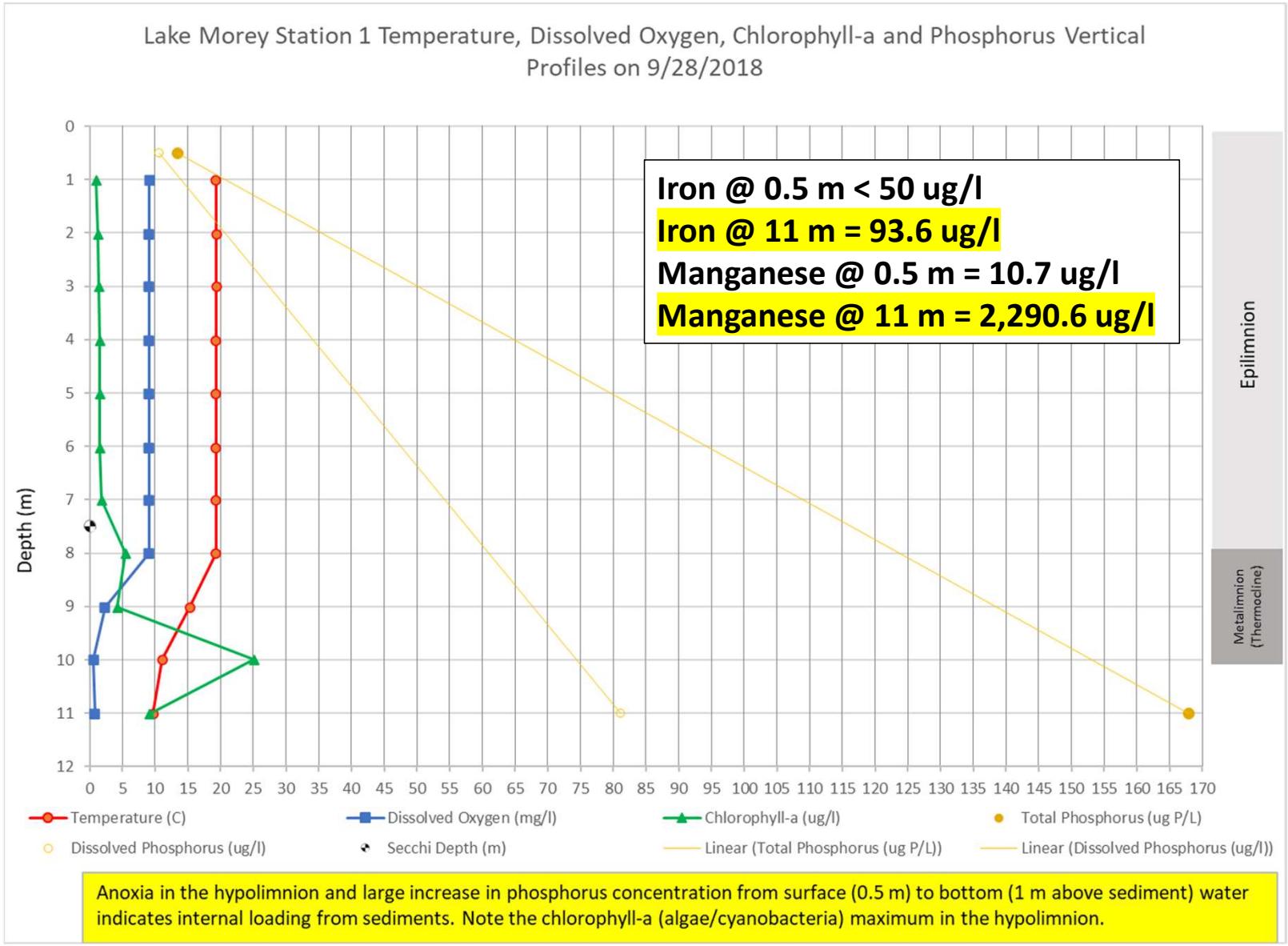
2021 LMP Phosphorus Comparison for VT Lakes



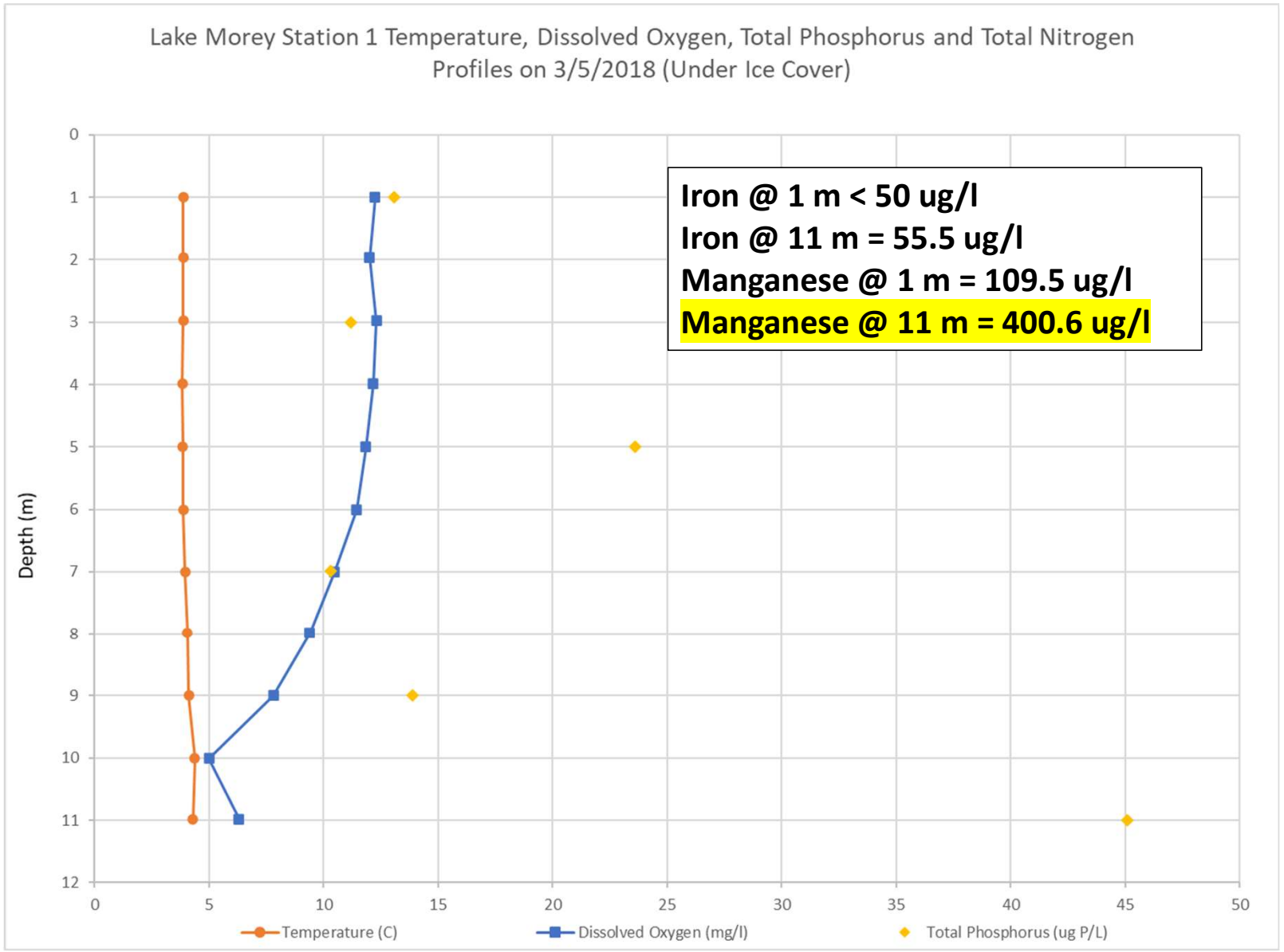

Lake Morey Station 1 Vertical Water Quality Profile 7/6/2021
Lake Depth (m)
0
1
2
3
4
5
6
7
8
9
10
11
12
0
5
10
15
20
25
Iron @ 0.5 m < 50 ug/l
Iron @ 10 m < 50 ug/l
Manganese @ 0.5 m = 9.7 ug/l
Manganese @ 10 m = 483 ug/l
Temperature (C)
Dissolved Oxygen (mg/l)
Secchi Depth (m)
LMP 10 m hose Total Phosphorus (ug/l)
Total Phosphorus (ug/l)
Dissolved Phosphorus (ug/l)



Iron @ 0.5 m < 50 ug/l
Iron @ 10 m < 50 ug/l
Manganese @ 0.5 m = 9.6 ug/l
Manganese @ 10 m = 263 ug/l



Anoxia in the hypolimnion and large increase in phosphorus concentration from surface (0.5 m) to bottom (1 m above sediment) water indicates internal loading from sediments. Note the chlorophyll-a (algae/cyanobacteria) maximum in the hypolimnion.


Lake Morey Station 1 Temperature, Dissolved Oxygen, Total Phosphorus and Total Nitrogen Profiles on 3/5/2018 (Under Ice Cover)
Depth (m)
0
1
2
3
4
5
6
7
8
9
10
11
12
0
5
10
15
20
25
30
35
40
45
50
Temperature (C)
Dissolved Oxygen (mg/l)
Total Phosphorus (ug P/L)
Iron @ 1 m < 50 ug/l
Iron @ 11 m = 55.5 ug/l
Manganese @ 1 m = 109.5 ug/l
Manganese @ 11 m = 400.6 ug/l

2022
Lay Monitoring Program Additions

- Lake depth (handheld sonar)
- Secchi view tube (Aqua Scope)
- Surface bottle grab samples
  - ➢total phosphorus
  - ➢chlorophyll-a
  - ➢caffeine (septic indicator)
- Cyanobacteria monitoring?

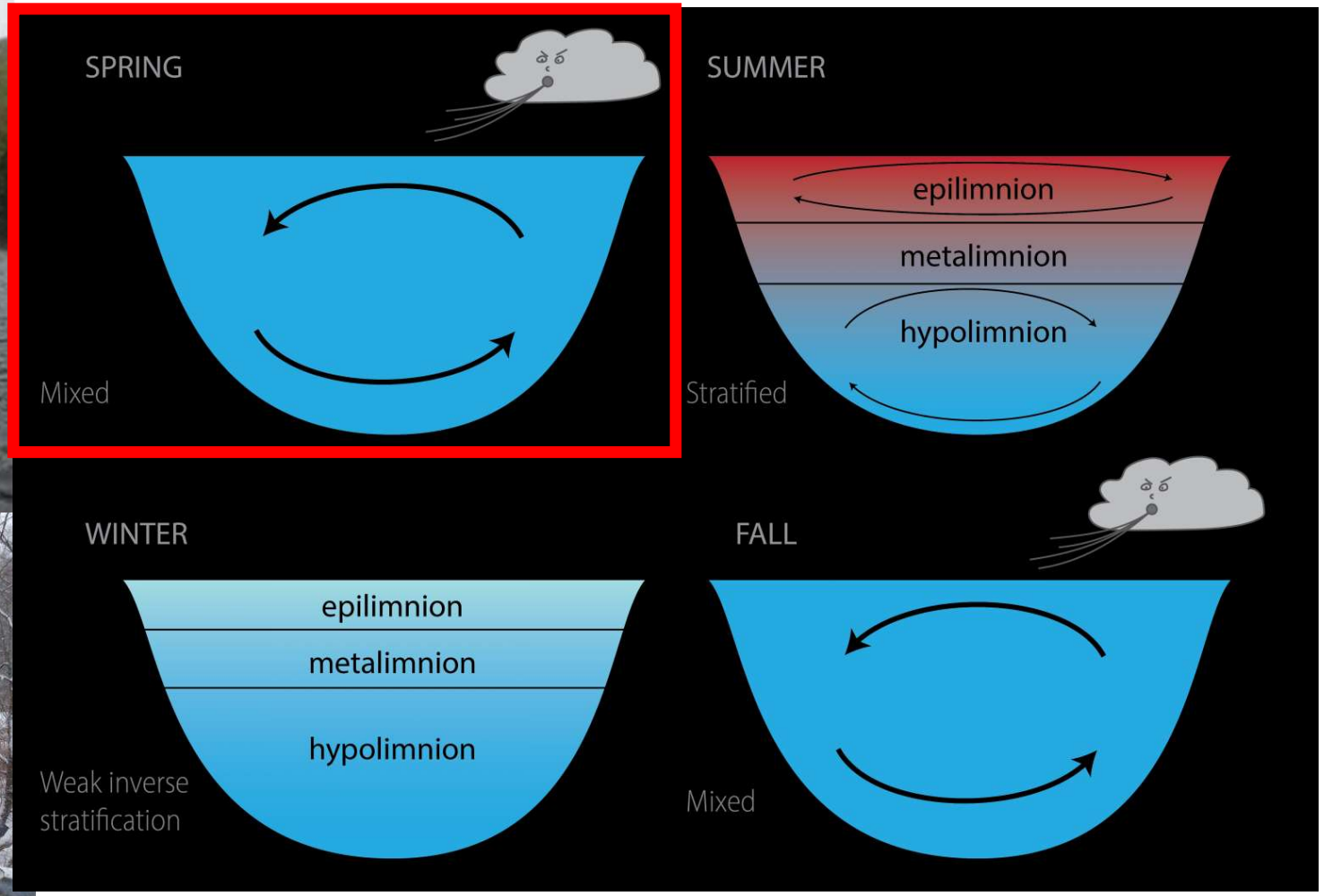
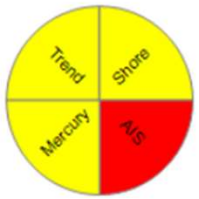


Figure of lake mixing curtesy of Hilary Dugan @hildug

MOREY - data through 2020

Learn How Lakes Are Scored



Lake Area:
549.8 acres

Basin Lake Area Ratio: 9

Max Depth:
13.1 meters

Mean Spring TP:
21.1 ug/L

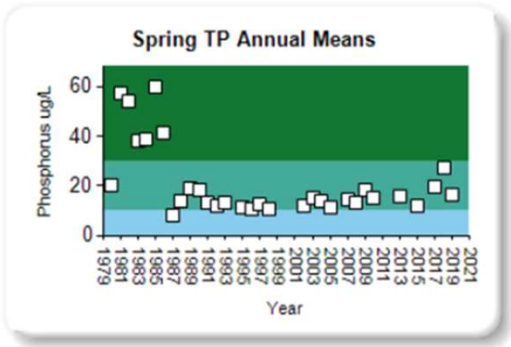
Mean Summer TP:
19.5 ug/L

Mean Summer Chla:
6.4 ug/L

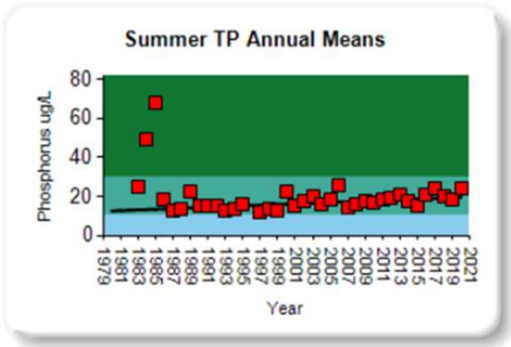
Mean Summer Secchi:
6.4 meters

Hypereutrophic
Eutrophic
Mesotrophic
Oligotrophic

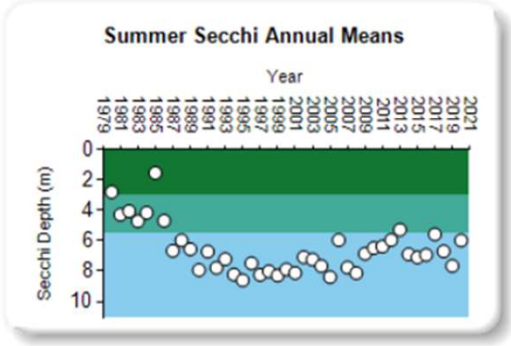
Spring TP Trend: p = 0.1905 | CV = 69
Stable



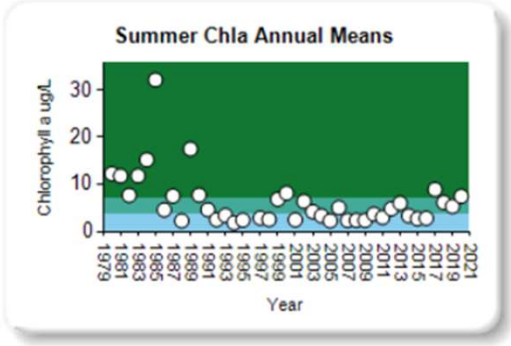
Summer TP Trend: p = 0.0045 | CV = 52
Highly significantly increasing



Summer Secchi Trend: p = 0.6056 | CV = 23
Stable



Summer Chla Trend: p = 0.1865 | CV = 92
Stable



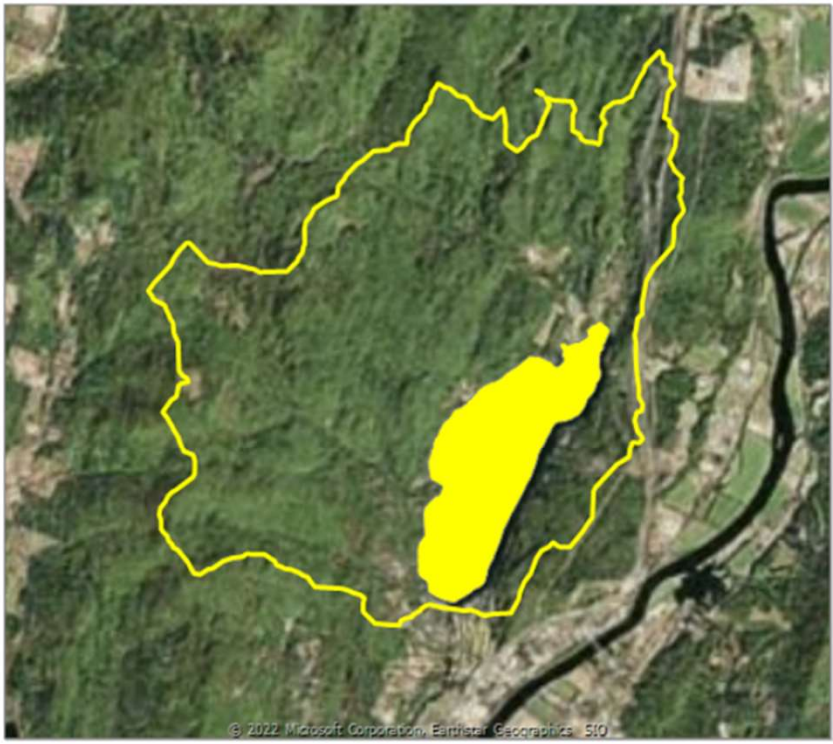
Stresses / Impairments

Stressed -- Phosphorus

Trend Score: Fair

WQ Standards Status: Stressed

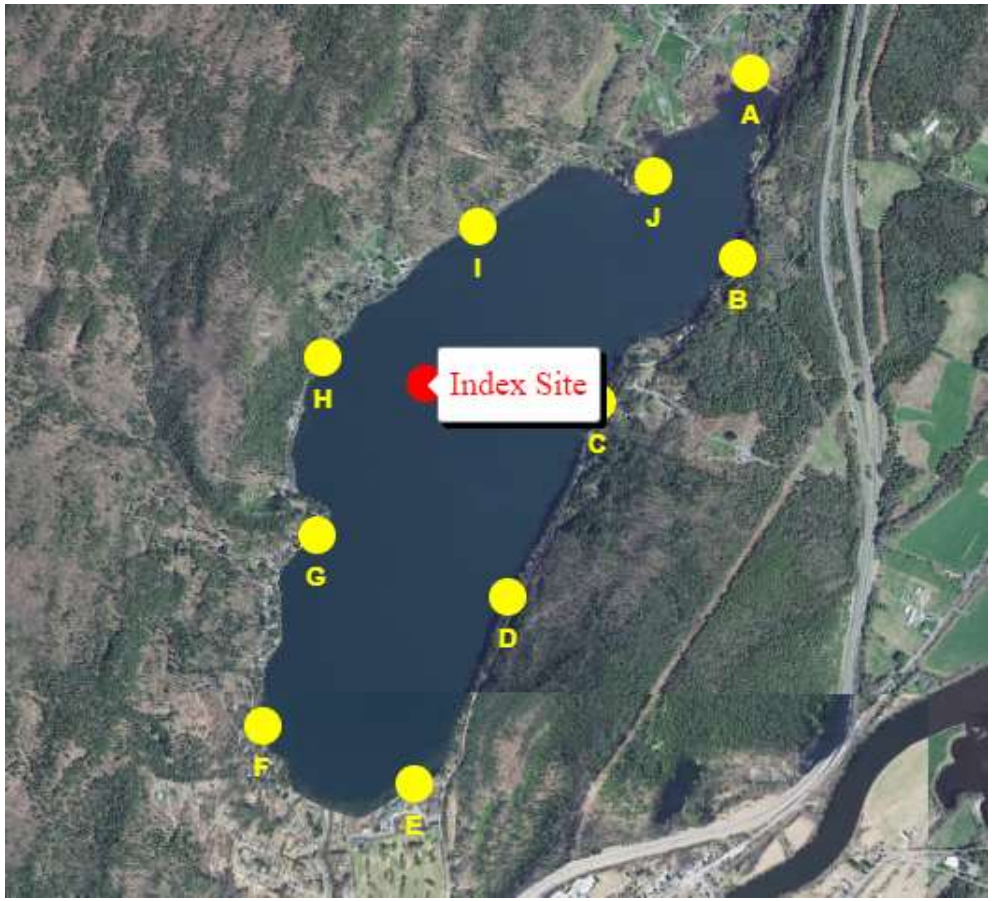
Watershed Score: Moderately Disturbed



OPEN WATER INDEX SITE

LAKESHORE HABITAT

TRIBUTARIES



28°

VALLEY NEWS

News Opinion Sports Features Obituaries Classifieds Cal

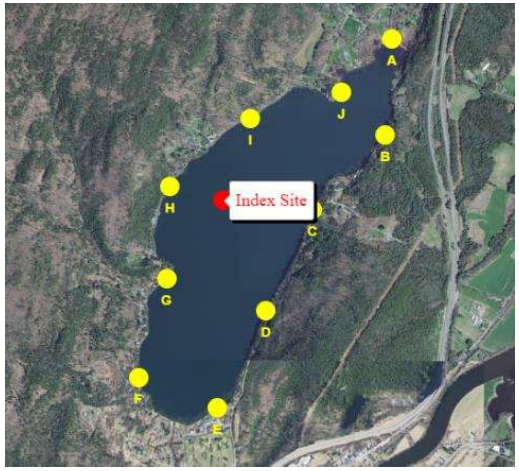
Features > Science

Scientists look to fight cyanobacteria on Lake Morey, Fairlee before it becomes a problem

Kellie Merrell, right, drops a sediment core sampler into Lake Morey in Fairlee, Vt., as her fellow Vermont Agency of Natural Resources scientist Leslie Matthews waits in the water to help her retrieve the sample on Tuesday, August 24, 2021. After separating the sample into layers, they can count the number of organisms called diatoms under a microscope to see changes over time.(Valley News - James M. Patterson) Copyright Valley News. May not be reprinted or used online without permission. Send requests to permission@vnews.com. Valley News photographs — James M. Patterson

Environmental scientist Leslie Matthews, of the Vermont Agency of Natural Resources, checks the level of a sample of water from Lake Morey in Fairlee, Vt., on Tuesday, Aug. 24, 2021, that will be tested for phosphorus. Matthews and other water quality monitors on the lake are researching rising levels of phosphorus in the lake. (Valley News - James M. Patterson) Copyright Valley News. May not be reprinted or used online without permission. Send requests to permission@vnews.com.

Kellie Merrel, an Environmental Scientist with the Vermont Agency of Natural Resources, records data from a sensor dropped to the bottom of Lake Morey in Fairlee, Vt., Tuesday, Aug. 24, 2021. The sensor relays data including the temperature, pH, conductivity, and the amounts of dissolved oxygen and chlorophyll-a in the water. (Valley News - James M. Patterson) Copyright Valley News. May not be reprinted or used online without permission. Send requests to permission@vnews.com. James M. Patterson



https://www.vnews.com/State-scientists-concerned-about-phosphorus-levels-in-Lakes-Morey-and-Fairlee-41946616

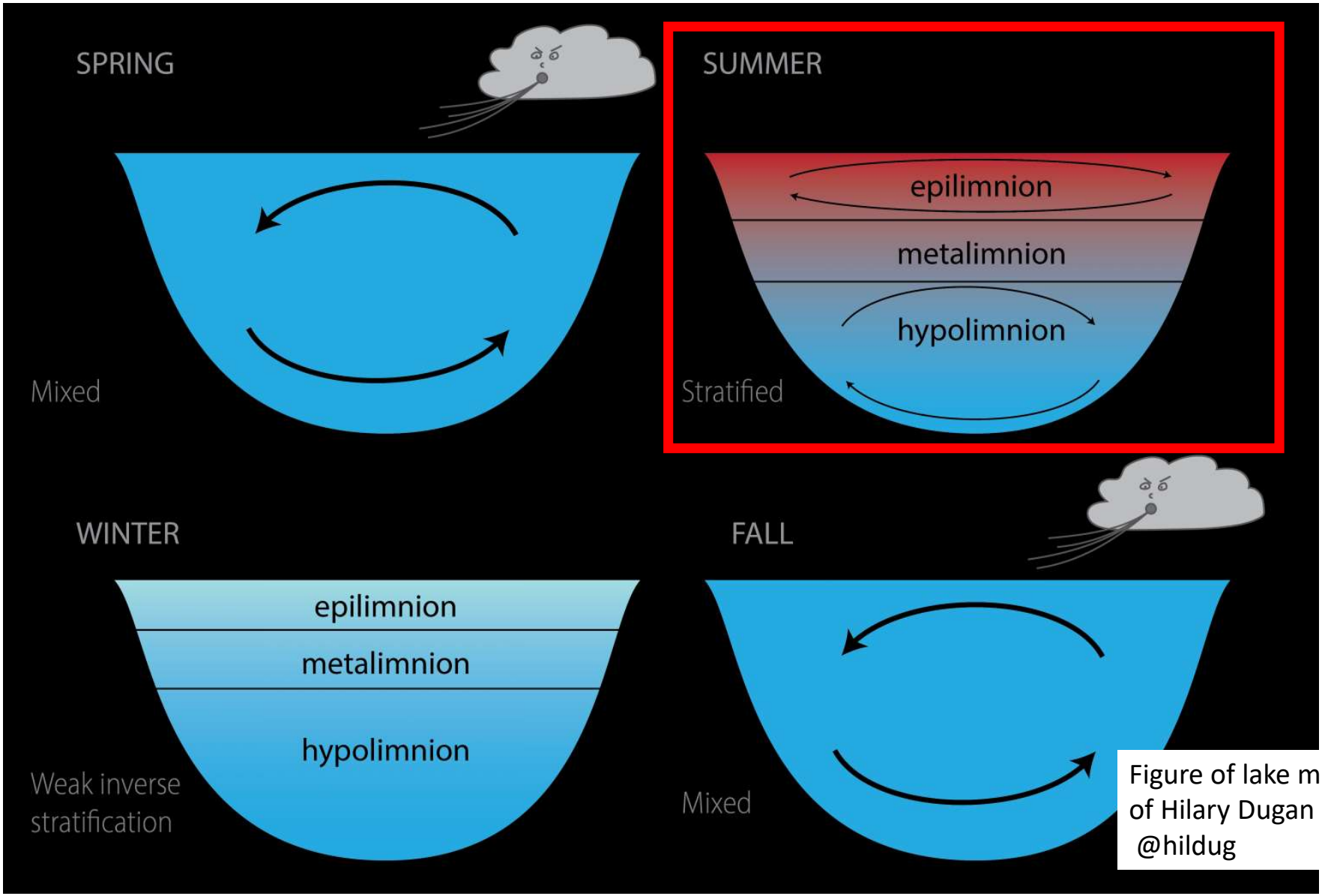
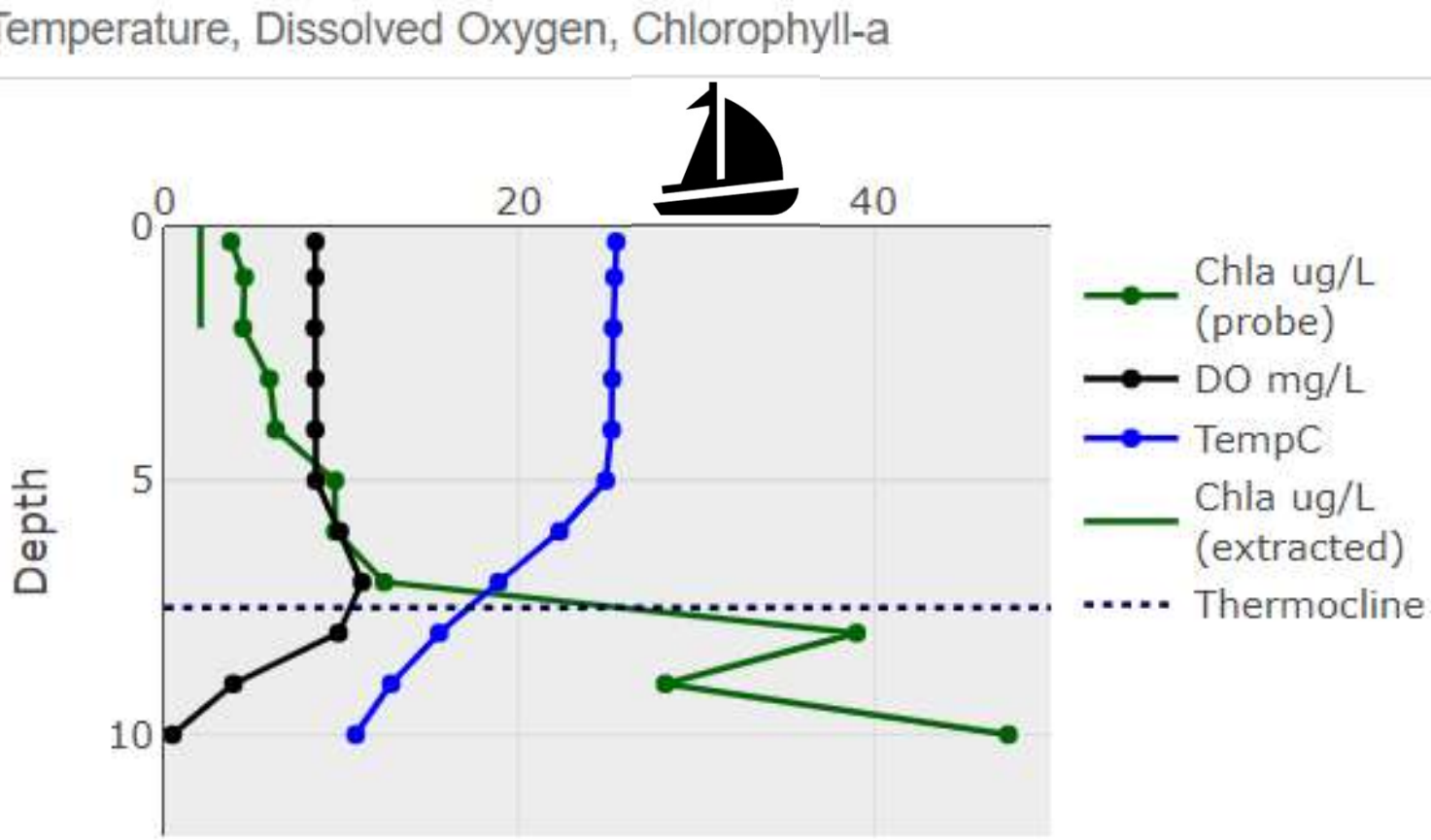
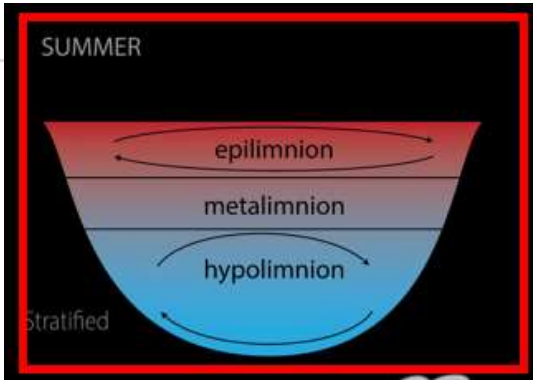
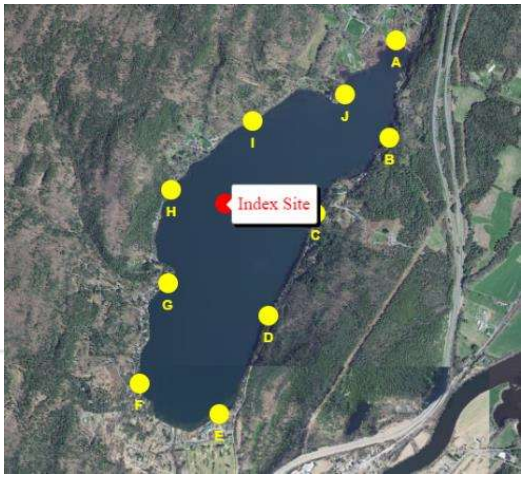


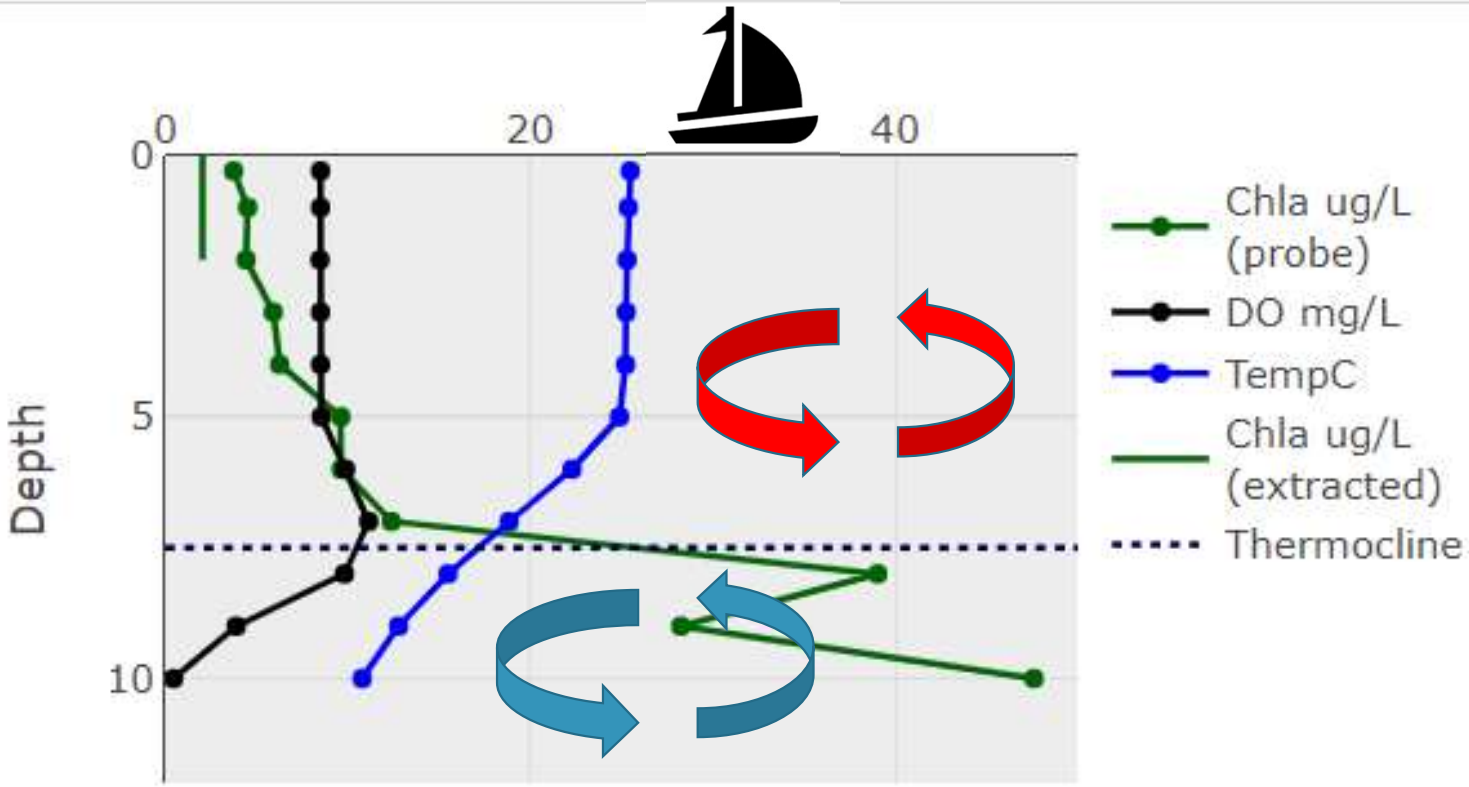
Figure of lake mixing courtesy of Hilary Dugan @hildug

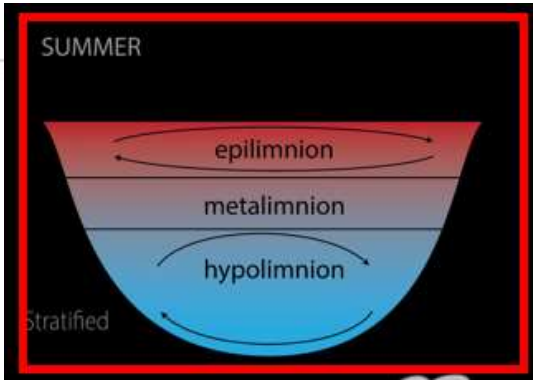




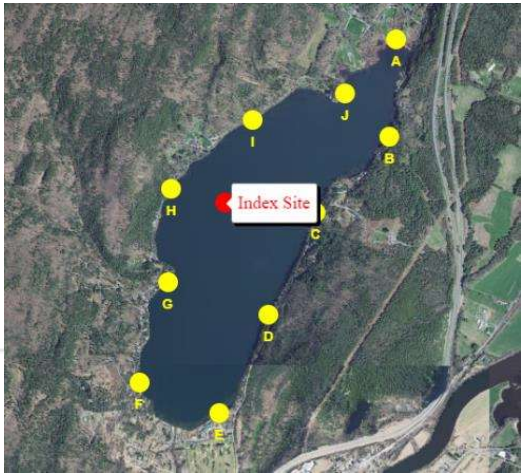
Measurements taken on24 August 2021 at the deep hole ‘Index Site’

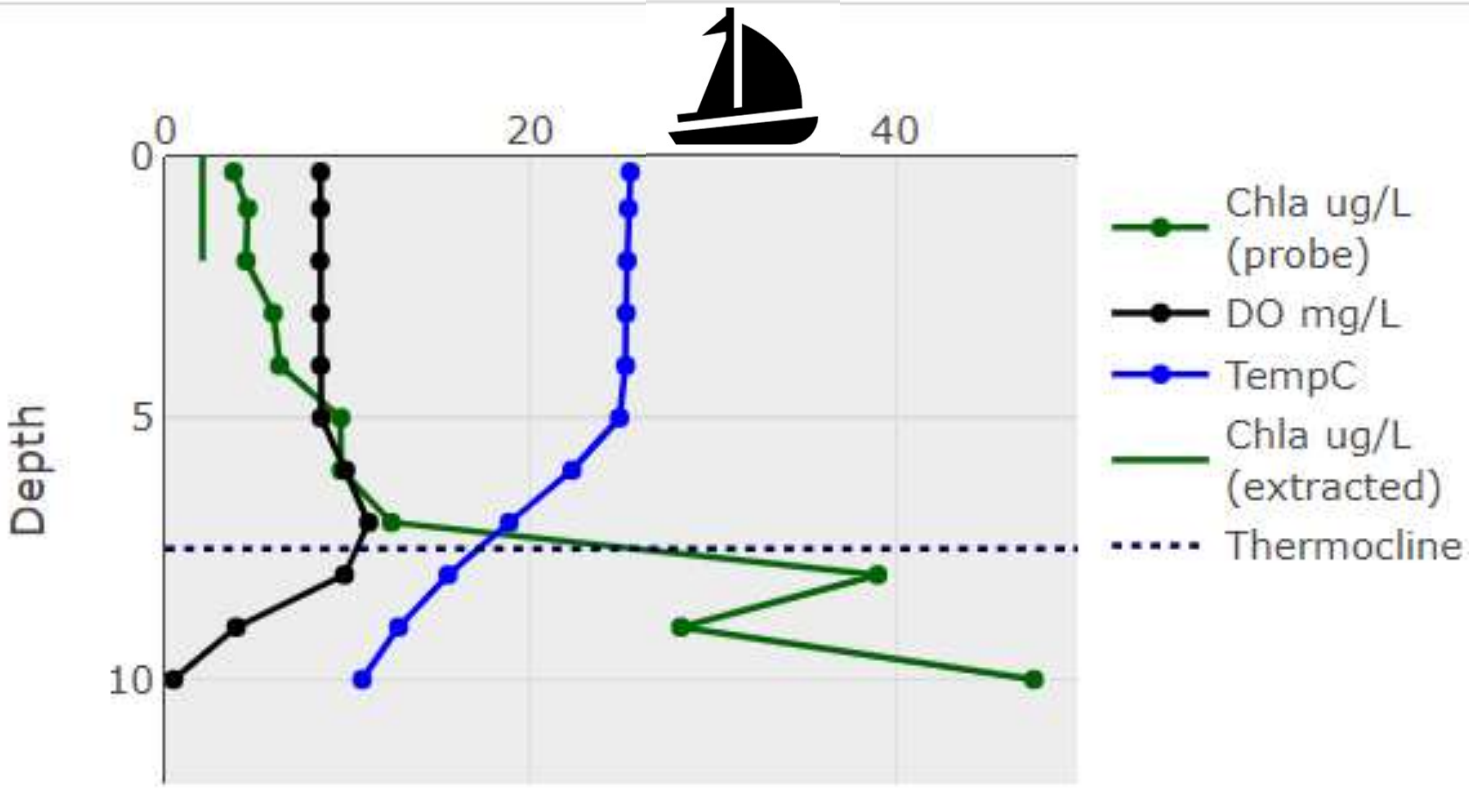


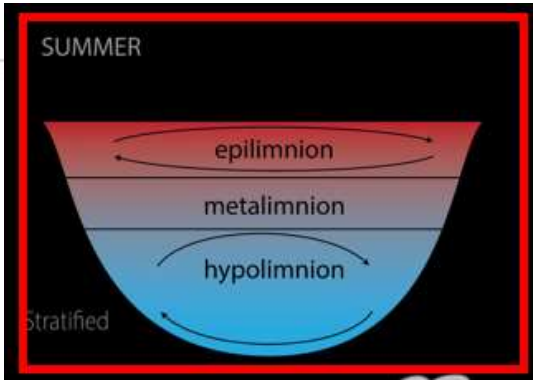




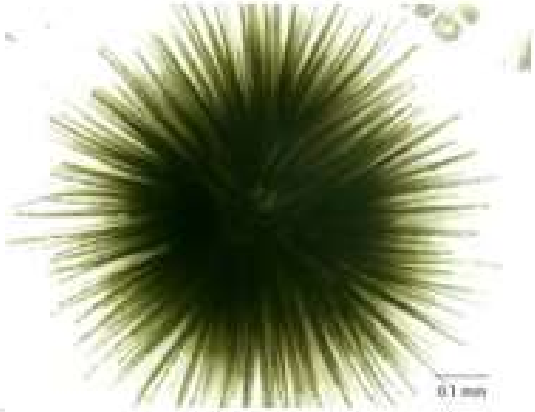
Measurements taken on24 August 2021 at the deep hole ‘Index Site’



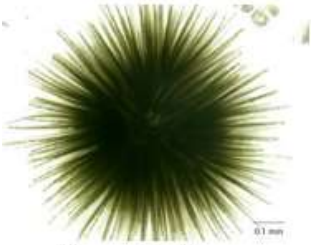




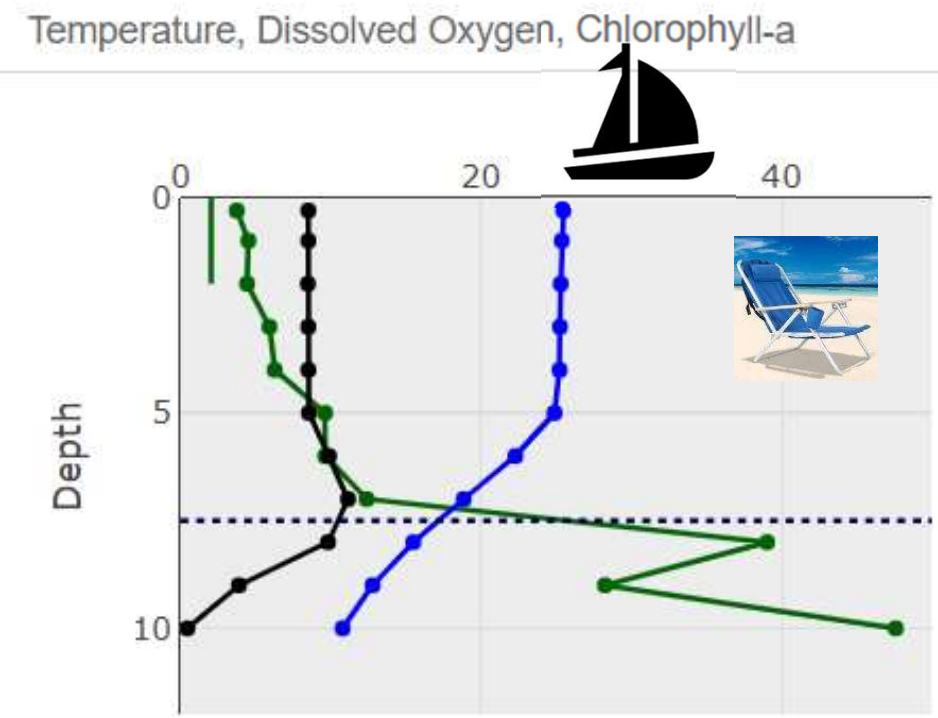
Measurements taken on24 August 2021 at the deep hole ‘Index Site’

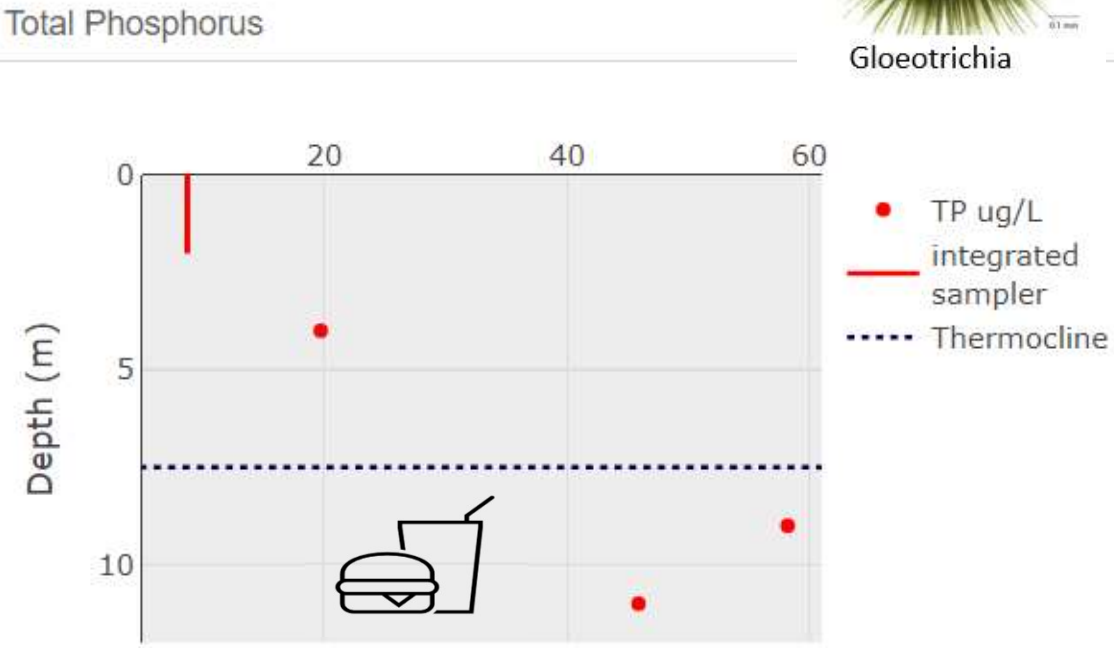


Gloeotrichia



Gloeotrichia

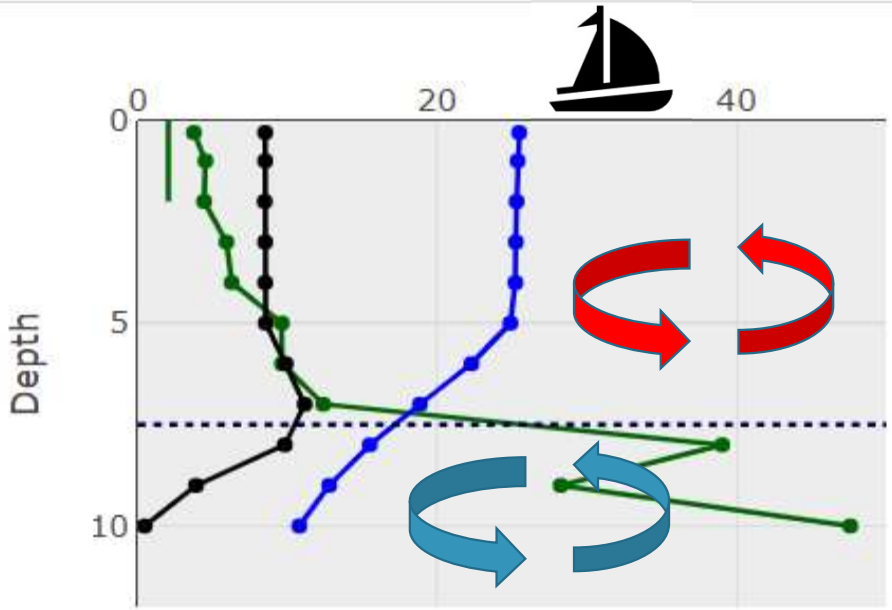




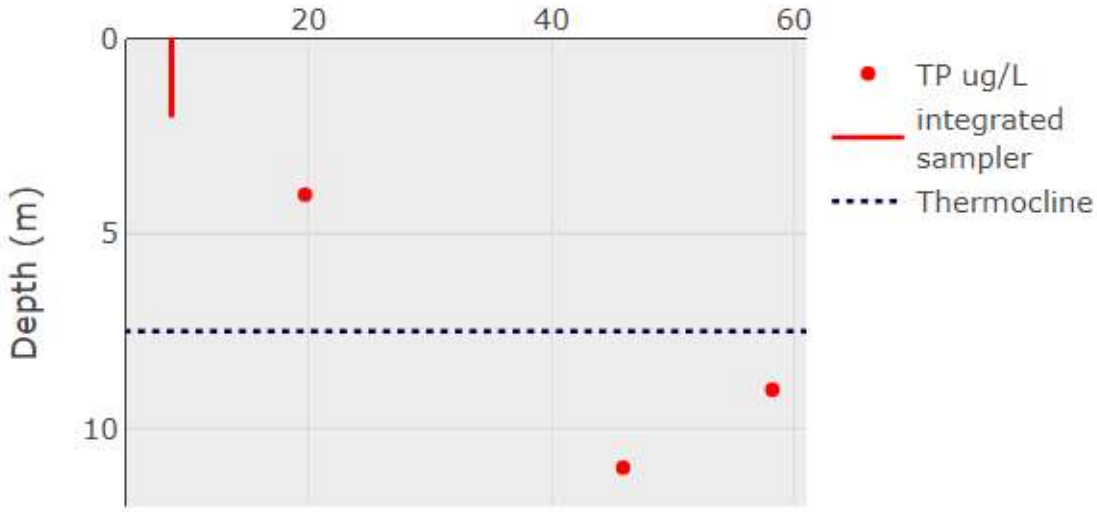
Measurements taken on24 August 2021 at the deep hole ‘Index Site’

Gloeotrichia

Temperature, Dissolved Oxygen, Chlorophyll-a

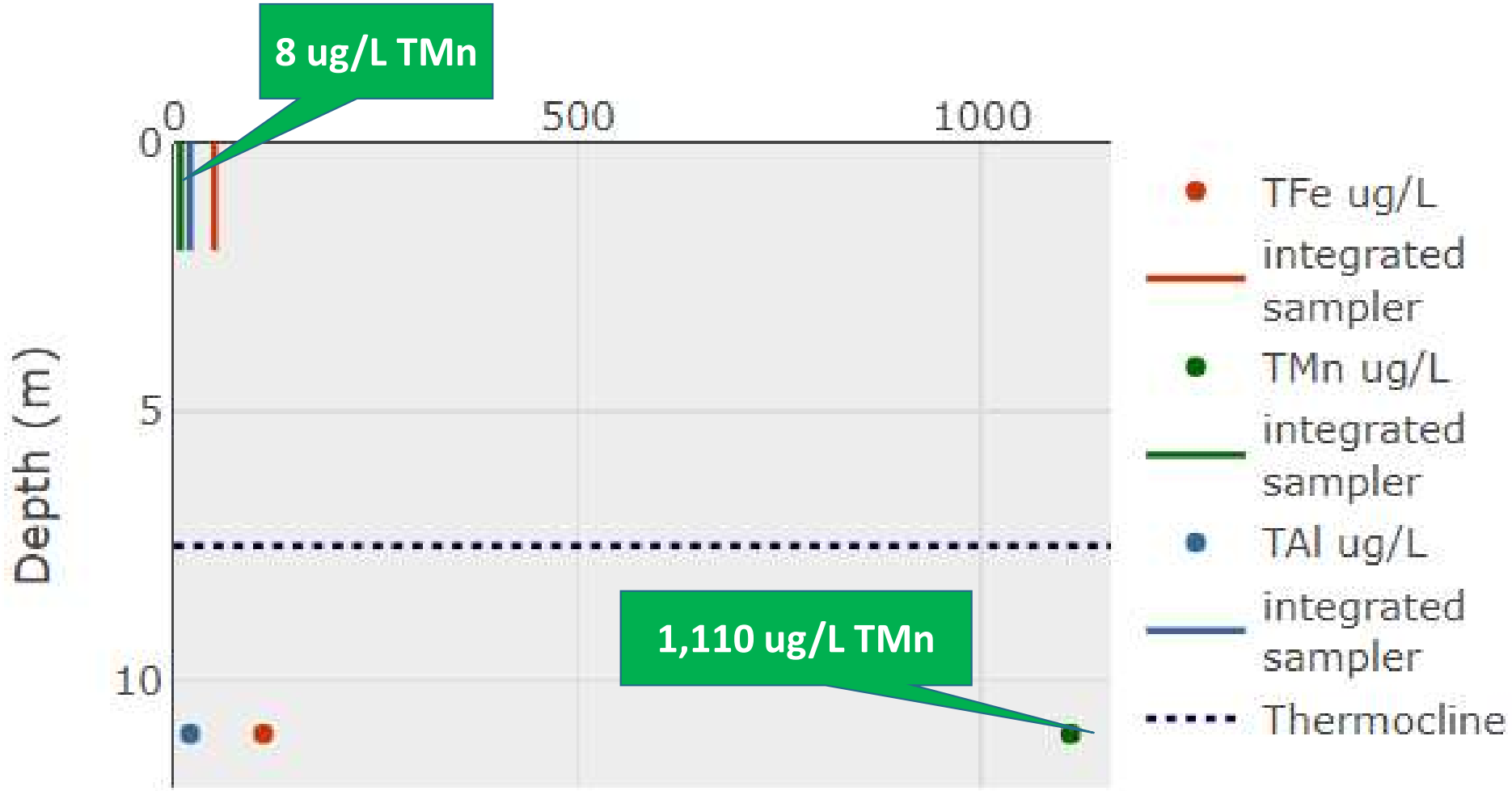


Total Phosphorus

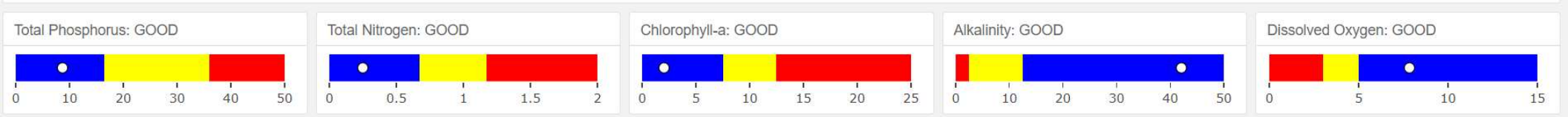


Measurements taken on24 August 2021 at the deep hole ‘Index Site’

Iron, Manganese and Aluminum



Measurements taken on24 August 2021 at the deep hole ‘Index Site’



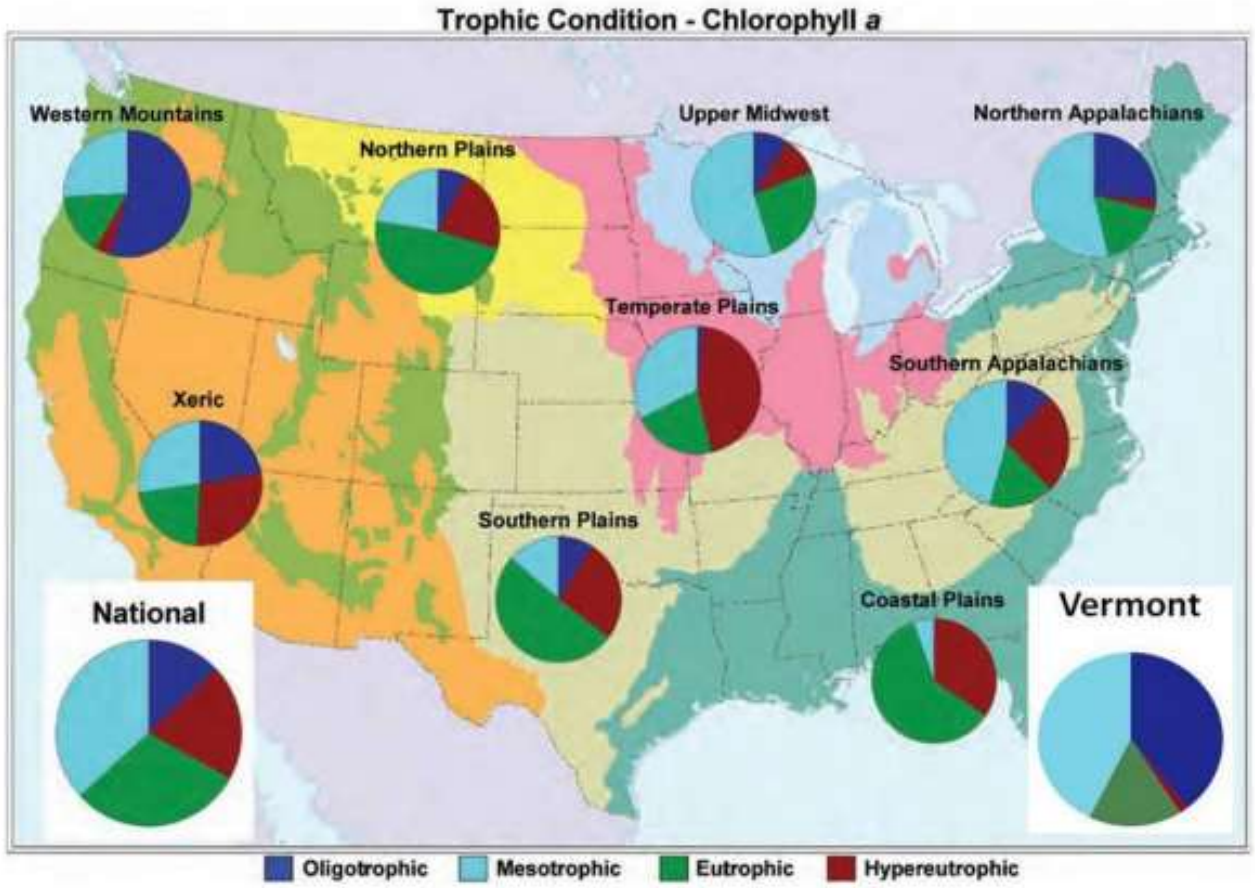
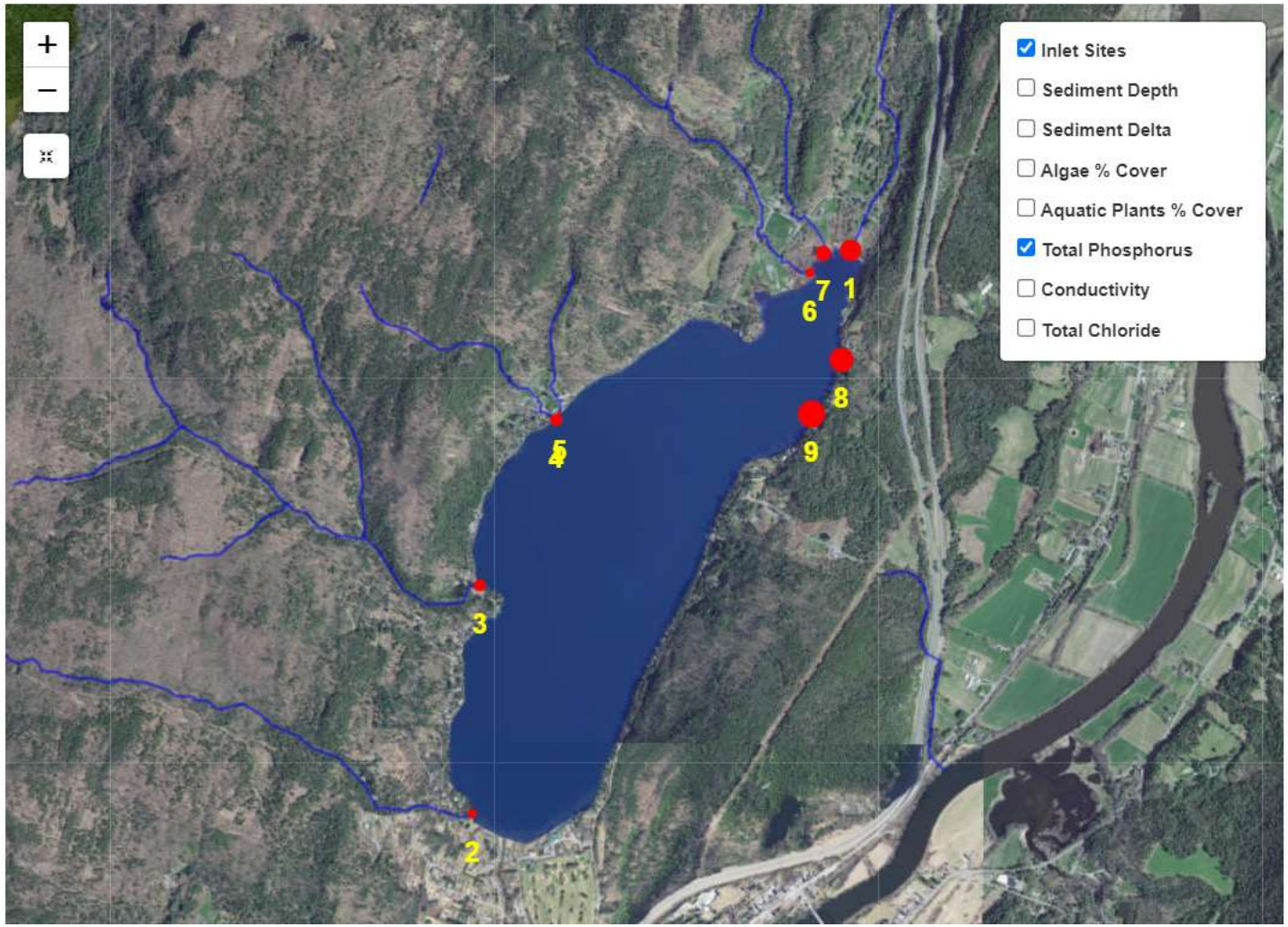


Figure 11. Trophic state across 9 ecoregions, the nation and Vermont (based on NLA chlorophyll-a thresholds).

Table 2. NLA chlorophyll-a trophic state thresholds.

NLA Thresholds	Chlorophyll-*a* (µg/L)
Hypereutrophic	>30
Eutrophic	>7 - 30
Mesotrophic	>2 -7
Oligotrophic	<2

Inlets Map



Water Quality Data | Physica | Wte

Analytical Data

InletNo	TP (ug/L)	TN (mg/L)	TCI (mg/L)
1	20.2	0.18	134.0
2	10.1	0.10	2.0
3	10.5	0.12	2.0
4	12.7	0.18	2.0
6	8.2	0.11	2.0
7	14.0	0.16	2.0
8	24.8	0.50	163.0
9	27.1	0.24	3.6

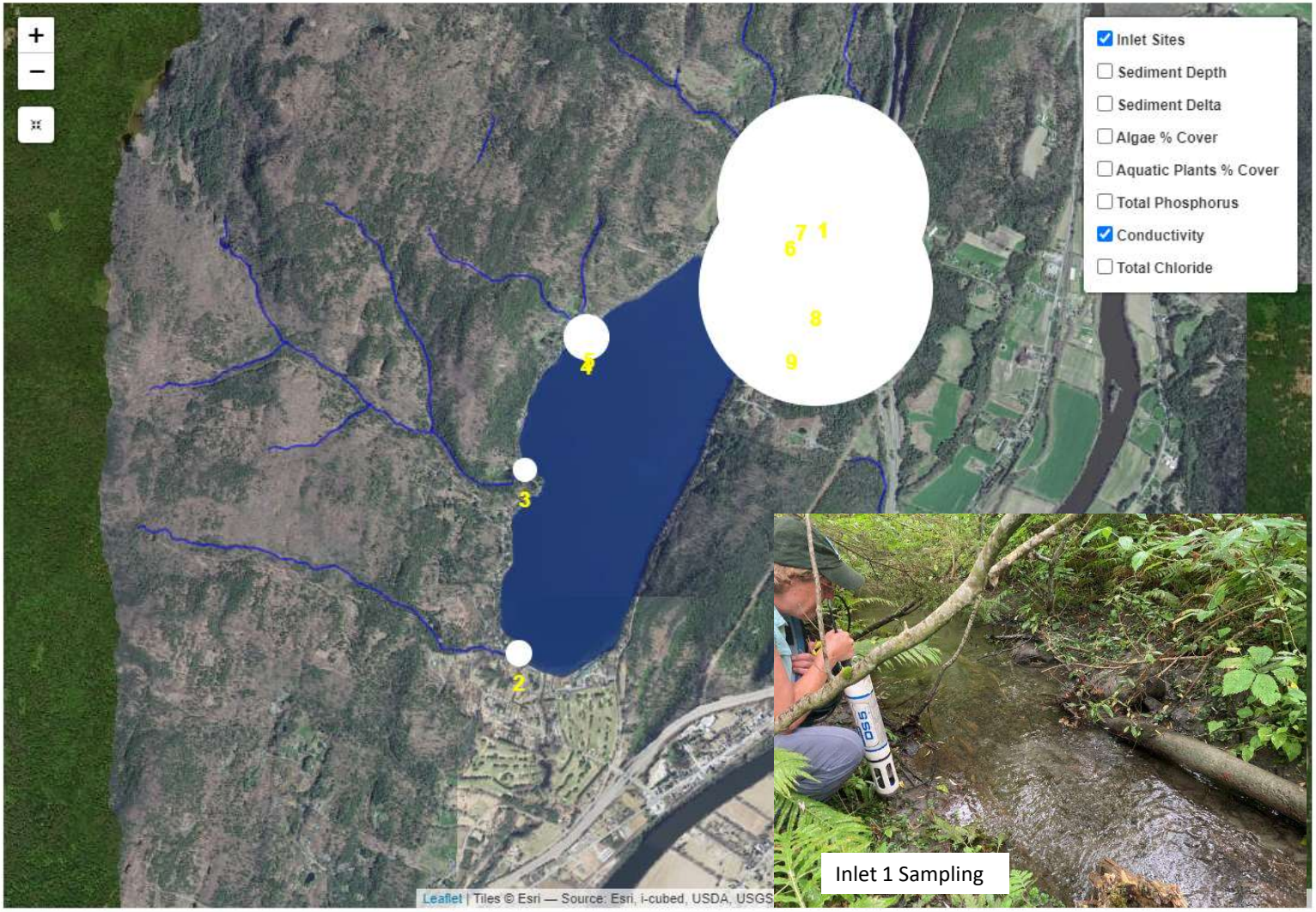
Inlet 8, Bonnie Oats Brook

Inlet 9, Pine Brook

Hydrolab Data

InletNo	Conductivity uS/cm	Turbidity NTU	Temp C	DO mg/L	DO %	pH	Chla (ug/L)
1	877.3	NA	19.37	8.37	92.5	7.85	NA
2	113.9	NA	18.76	9.13	99.5	8.01	NA
3	101.5	NA	18.06	9.16	98.4	7.87	NA
4	194.3	NA	14.30	9.11	90.4	7.25	NA
6	109.7	NA	18.60	8.88	96.4	7.78	NA
7	92.4	NA	18.67	8.88	96.5	7.62	NA
8	969.8	NA	24.57	7.76	94.9	8.03	NA
9	138.4	NA	17.27	8.89	94.0	7.54	NA

Inlets Map



Inlet 1 Sampling

Water Quality Data | Physical Characteristics | Macrophytes

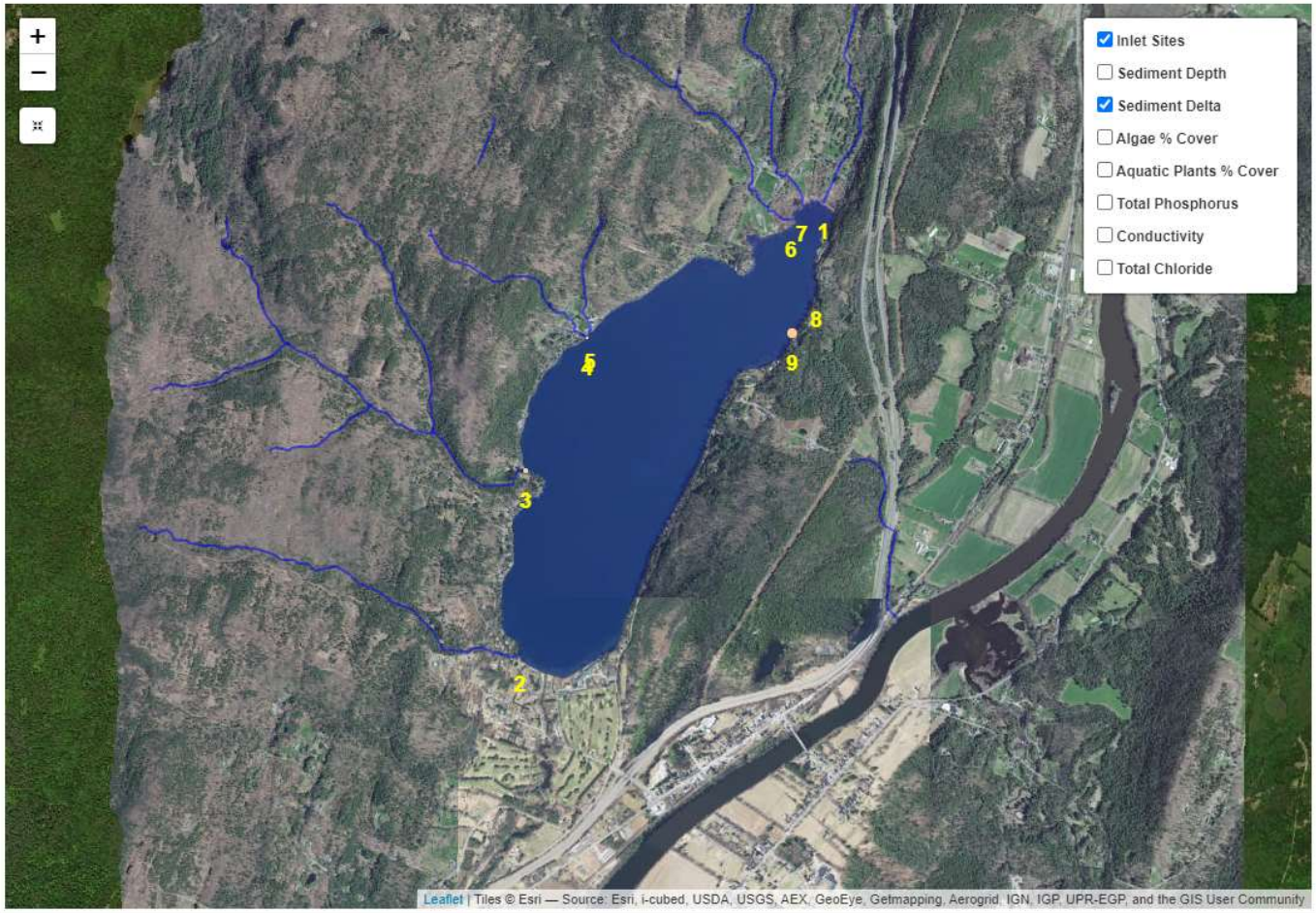
Analytical Data

InletNo	TP (ug/L)	TN (mg/L)	TCI (mg/L)
1	20.2	0.18	134.0
2	10.1	0.10	2.0
3	10.5	0.12	2.0
4	12.7	0.18	2.0
6	8.2	0.11	2.0
7	14.0	0.16	2.0
8	24.8	0.50	163.0
9	27.1	0.24	3.6

Hydrolab Data

InletNo	Conductivity uS/cm	Turbidity NTU	Temp C	DO mg/L	DO %	pH	Chla (ug/L)
1	877.3	NA	19.37	8.37	92.5	7.85	NA
2	113.9	NA	18.76	9.13	99.5	8.01	NA
3	101.5	NA	18.06	9.16	98.4	7.87	NA
4	194.3	NA	14.30	9.11	90.4	7.25	NA
6	109.7	NA	18.60	8.88	96.4	7.78	NA
7	92.4	NA	18.67	8.88	96.5	7.62	NA
8	969.8	NA	24.57	7.76	94.9	8.03	NA
9	138.4	NA	17.27	8.89	94.0	7.54	NA

Inlets Map



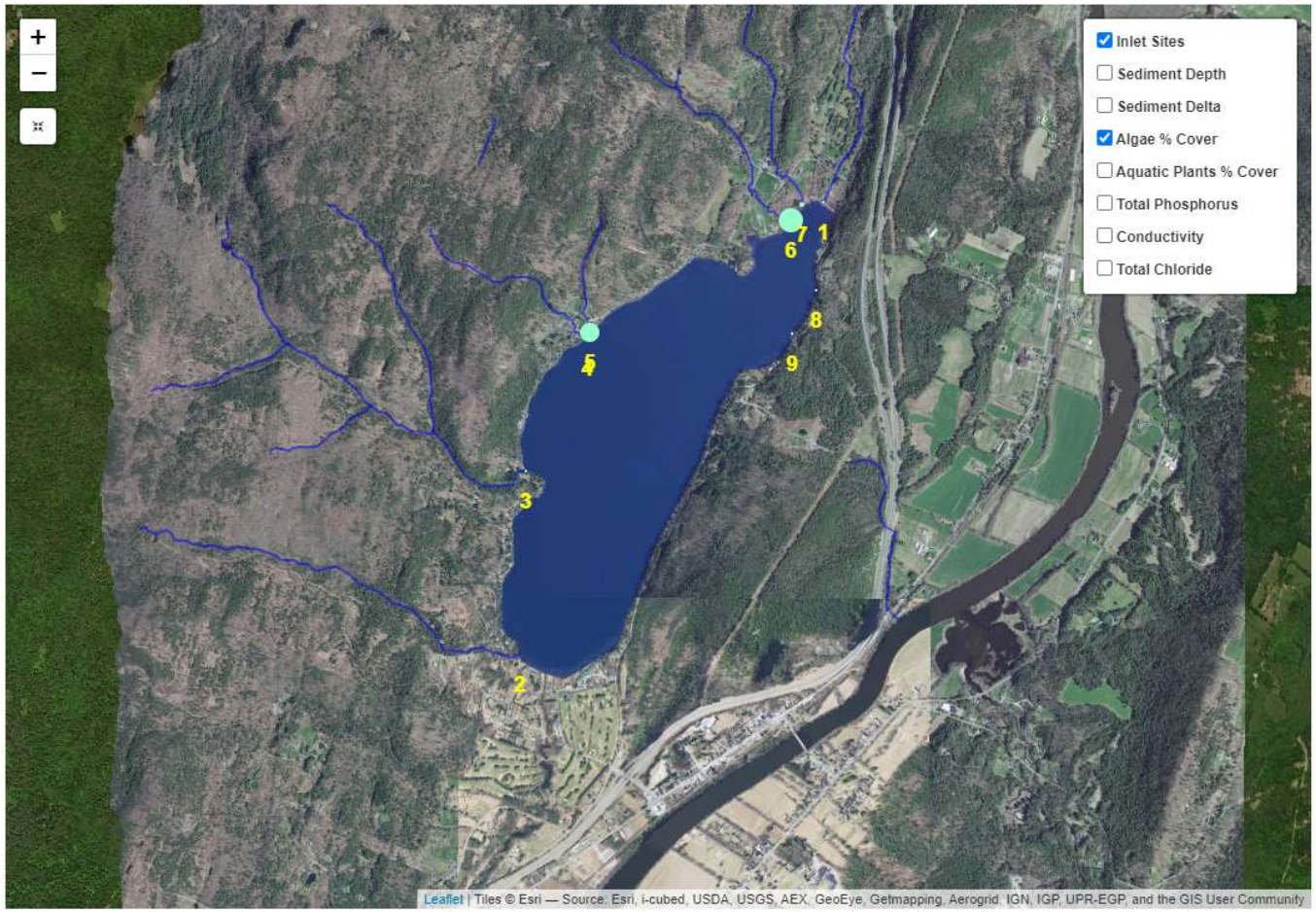
Water Quality Data | Physical Characteristics | Macrophytes

Sediment and Algae

InletNo	Sediment Depth (cm)	Sediment Delta (sq meters)	Algae %Cover
1	-1.0	0	5
2	40.0	0	0
3	0.1	3	2
4	2.0	2	2
5	-1.0	0	40
6	-1.0	0	50
7	-1.0	0	10
8	95.0	0	5
9	40.0	6	1

Inlet 9 Delta

Inlets Map



Water Quality Data | Physical Characteristics | Macrophytes

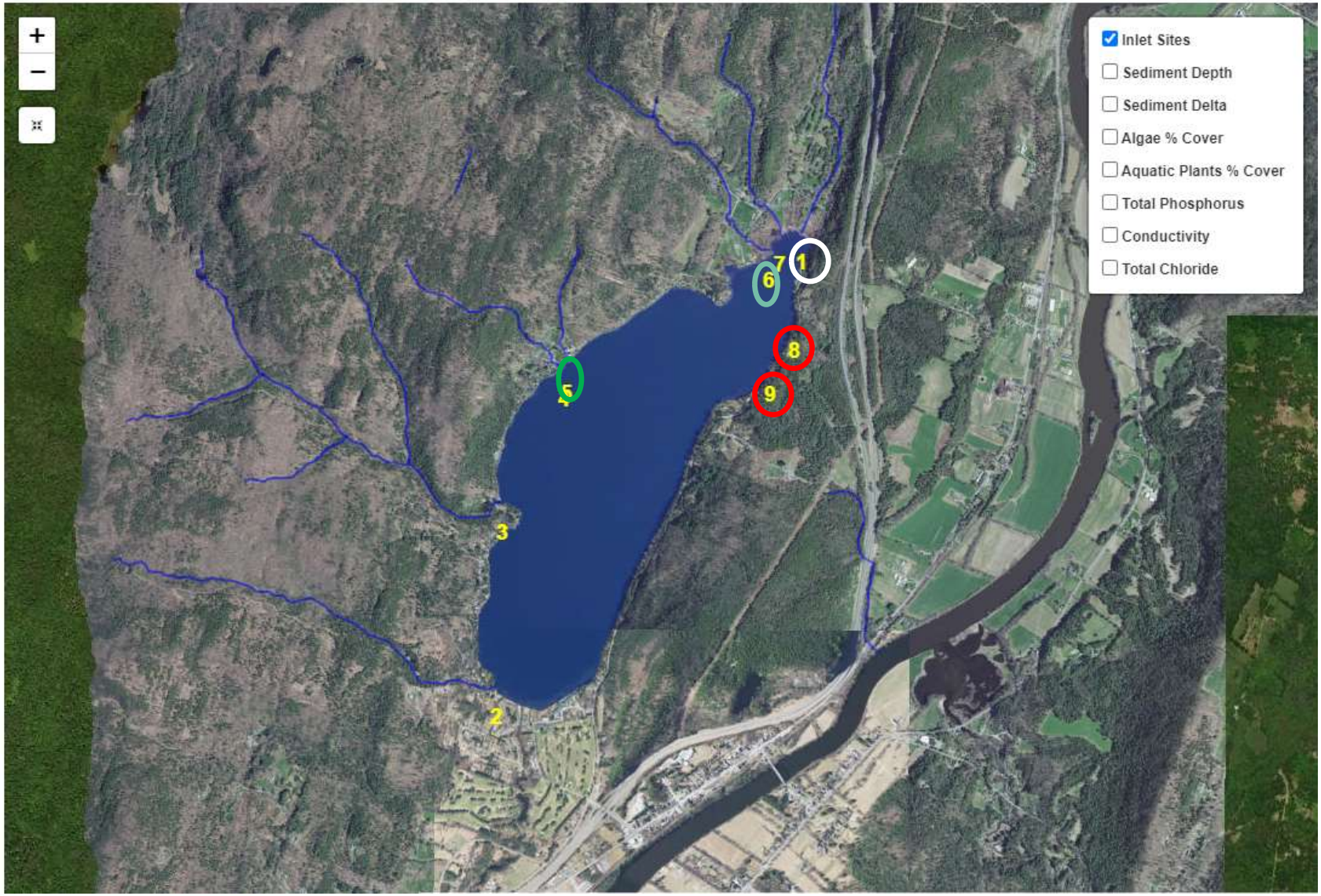
Sediment and Algae

InletNo	Sediment Depth (cm)	Sediment Delta (sq meters)	Algae %Cover
1	-1.0	0	5
2	40.0	0	0
3	0.1	3	2
4	2.0	2	2
5	-1.0	0	40
6	-1.0	0	50
7	-1.0	0	10
8	95.0	0	5
9	40.0	6	1

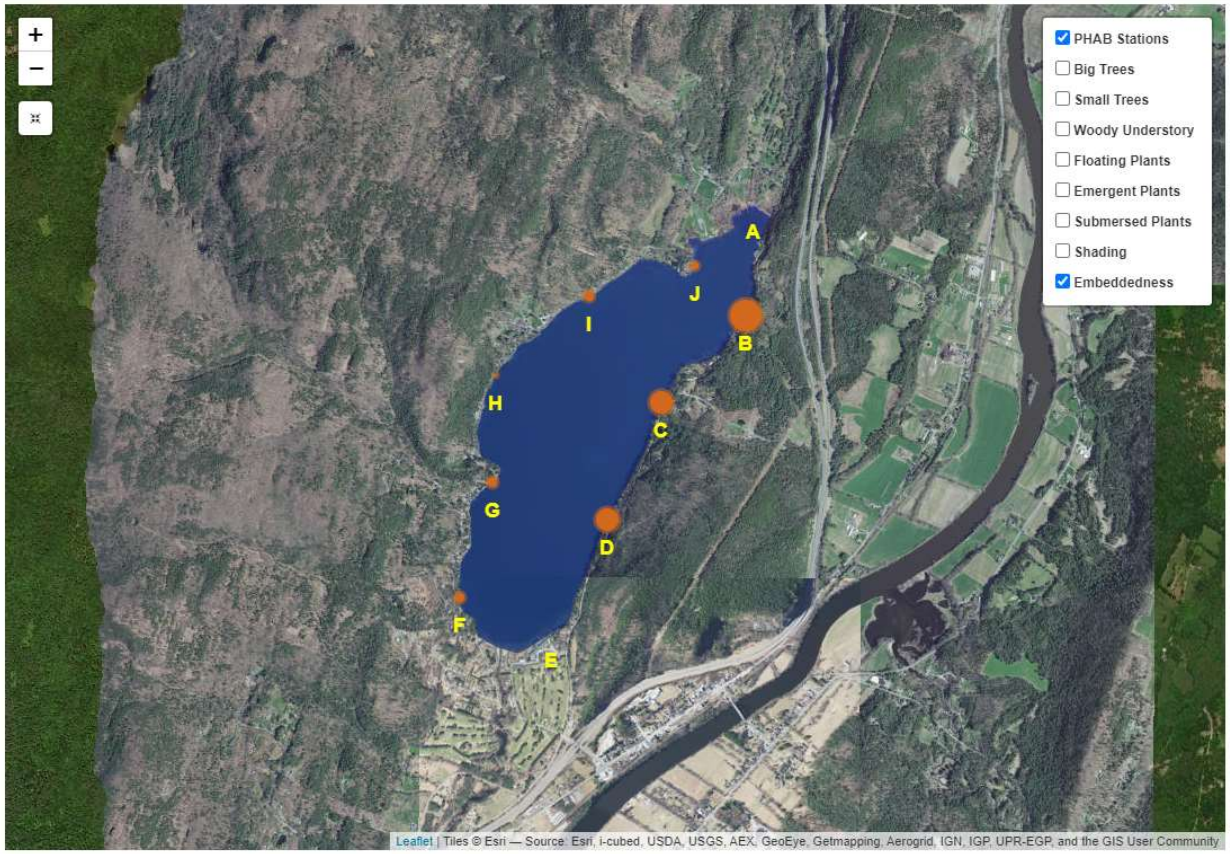
Aquatic Plants

InletNo	Plants %Cover	Dominant Plant 1	Dominant Plant 2	Dominant Plant 3
1	100	Nymphoides cordata	Typha latifolia	Potamogeton robbinsii
2	0	NA	NA	NA
3	0	NA	NA	NA
4	0	NA	NA	NA
5	75	Potamogeton amplifolius	Potamogeton illinoensis	Zosterella dubia
6	60	Nymphaea odorata ssp. Odorata	Pontederia cordata	Typha latifolia
7	100	Potamogeton robbinsii	Nuphar variegata	Typha latifolia
8	2	Nymphaea odorata ssp. Odorata	Elodea canadensis	Vallisneria americana
9	2	Vallisneria americana	NA	NA

Inlets Map


Inlet Sites
Sediment Depth
Sediment Delta
Algae % Cover
Aquatic Plants % Cover
Total Phosphorus
Conductivity
Total Chloride
1
2
3
4
5
6
7
8
9

Habitat Map



Assessments | Habitat Comparisons | Disturbances

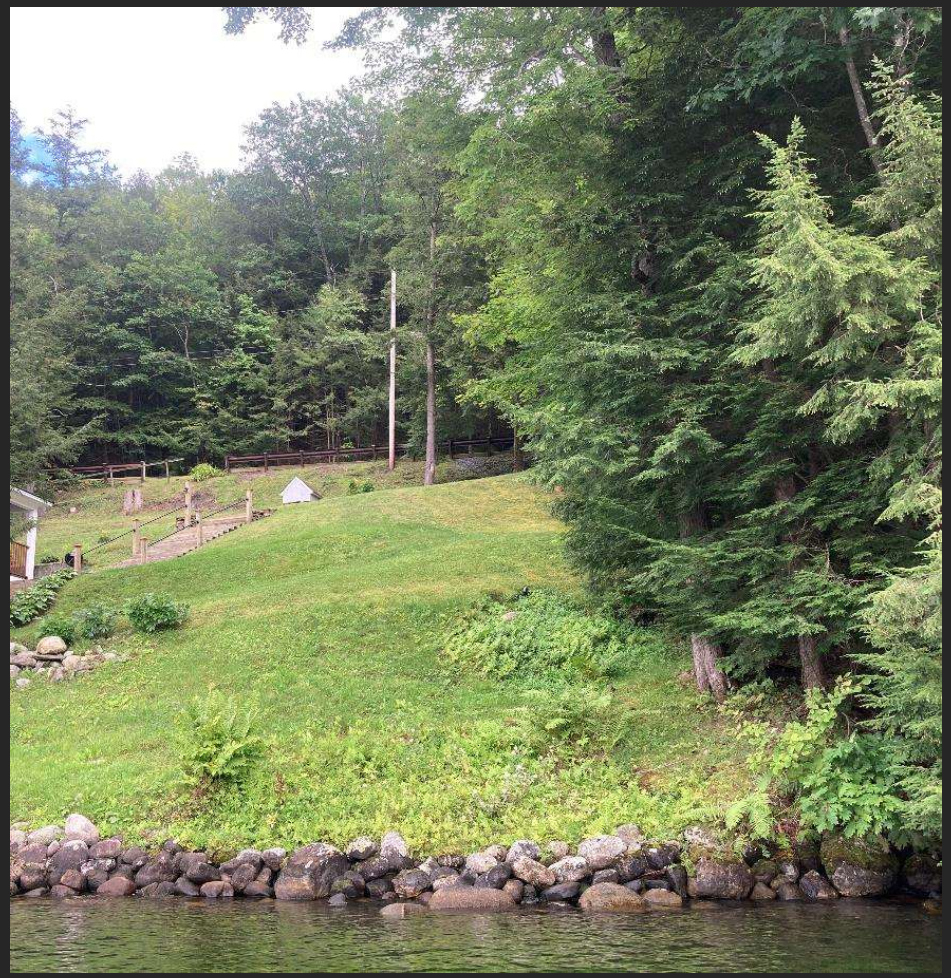
Assessments based on habitat indexes developed by EPA's National Lake Assessment program.

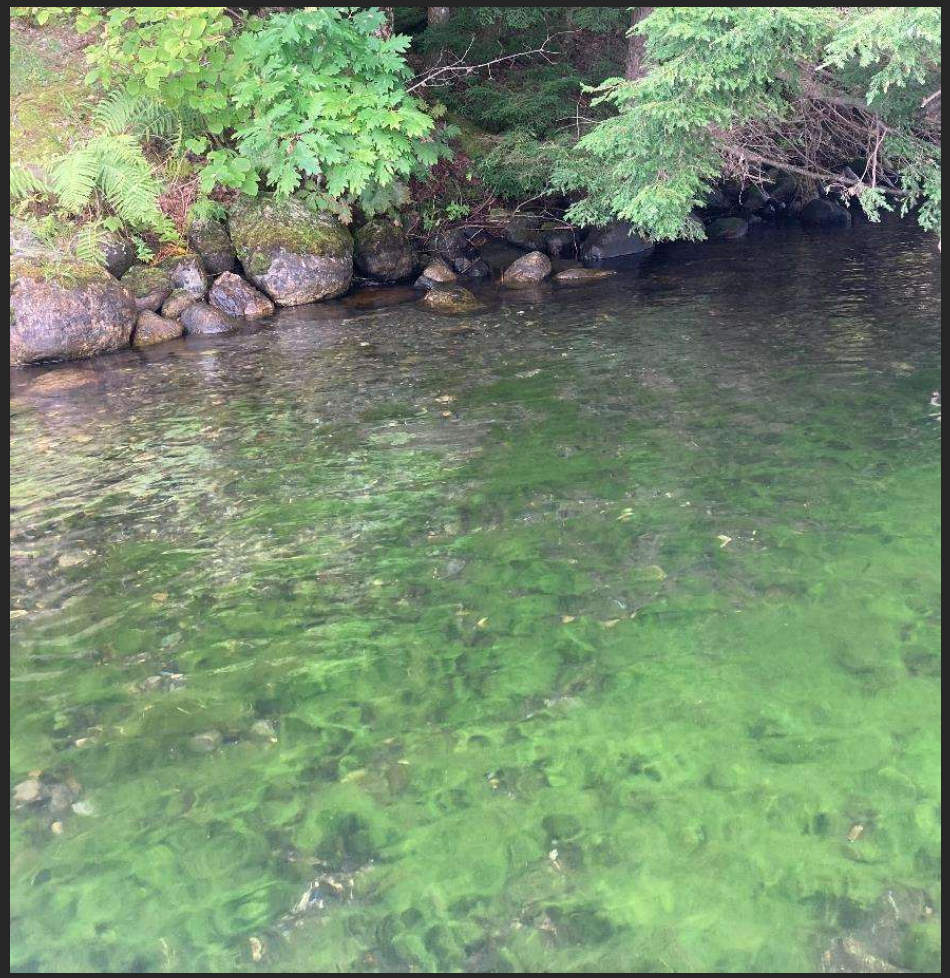
Lakeshore Disturbance: FAIR

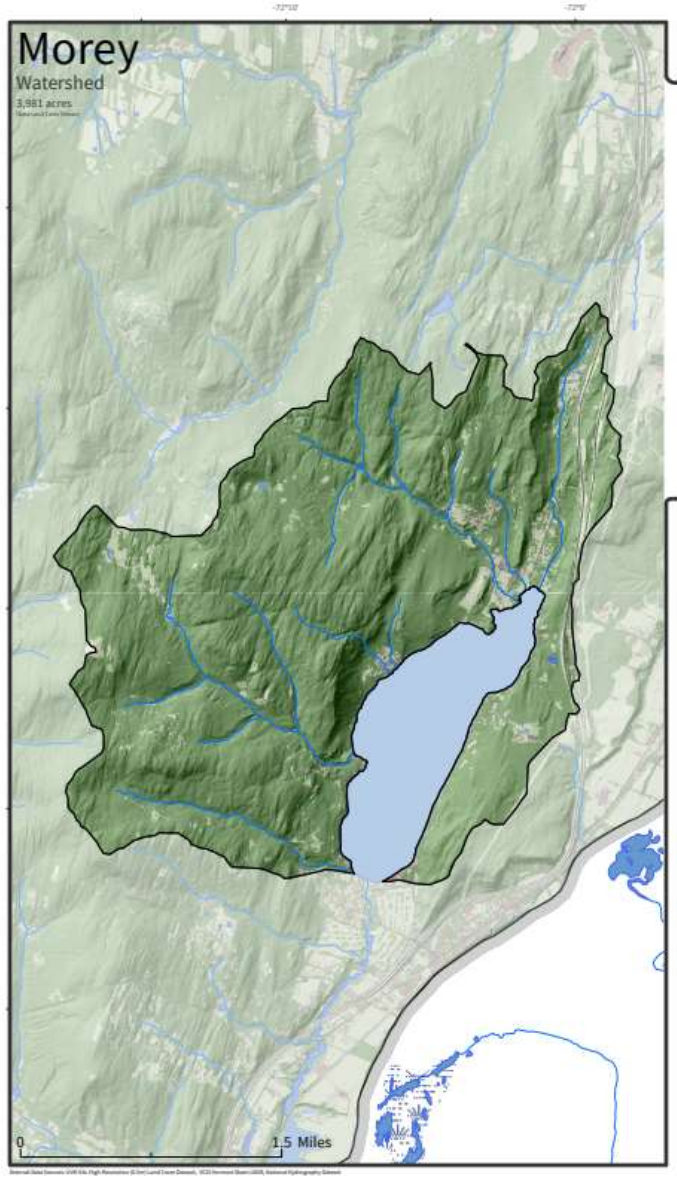
Lakeshore Habitat: FAIR

Shallow Water Habitat: POOR

Physical Complexity of Habitat: POOR

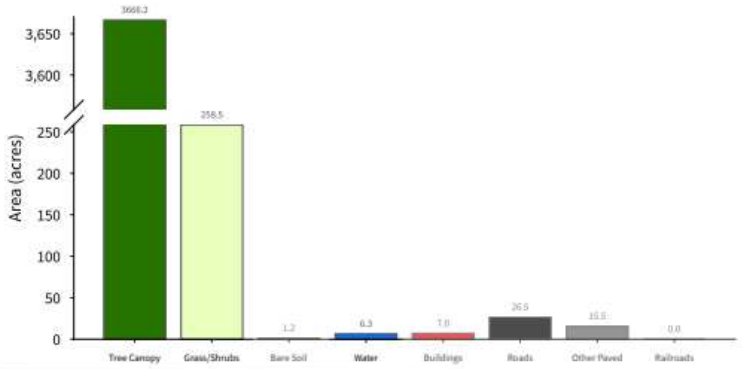






High-Resolution Land Cover Summary

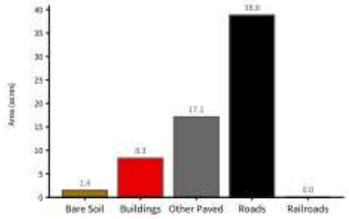
Base Land Cover (Top-Down*)



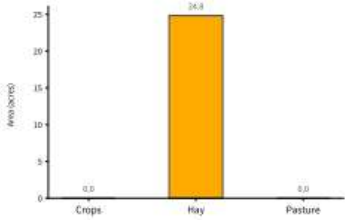
Supplemental Land Cover

Impervious Surfaces (65.69 acres - 1.7 % of total)

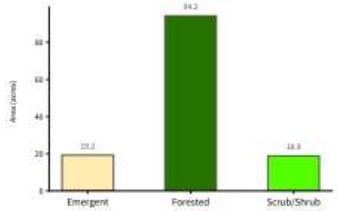
(Bottom-Up**)



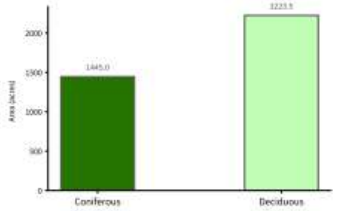
Agriculture (24.82 acres - 0.6 % of total)

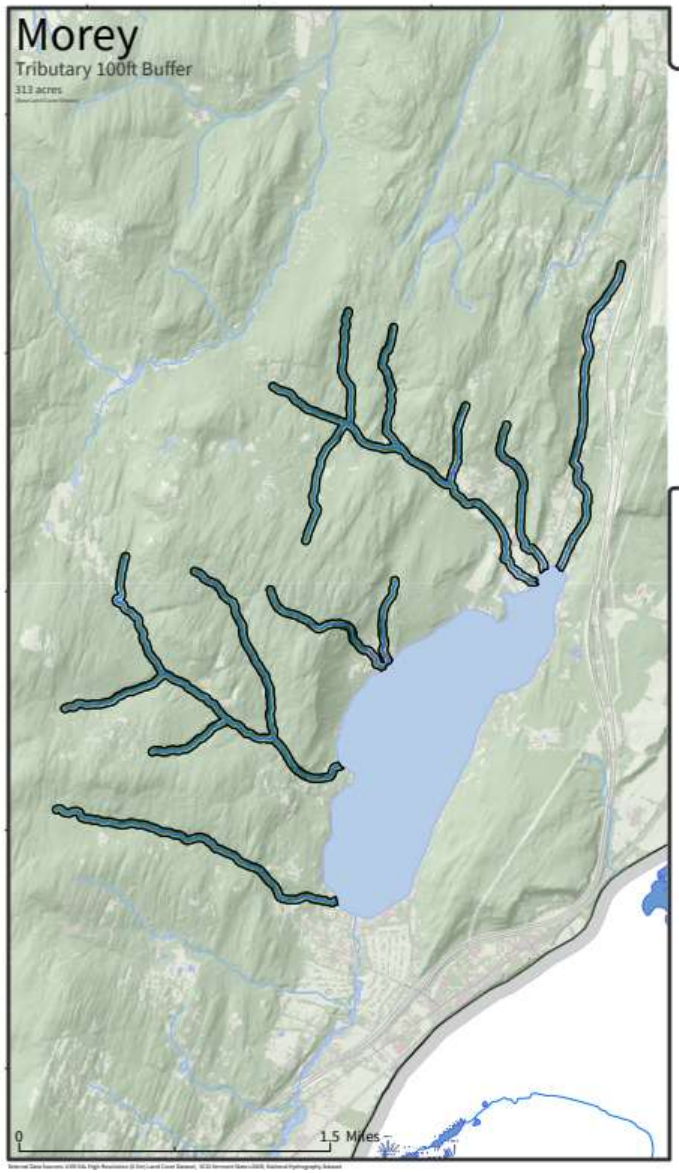


Wetlands (132.33 acres - 3.3 % of total)



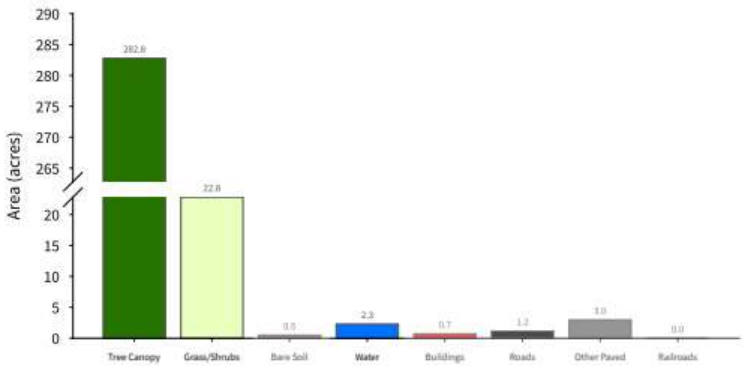
Tree Canopy (3,668.5 acres - 92.2 % of total)





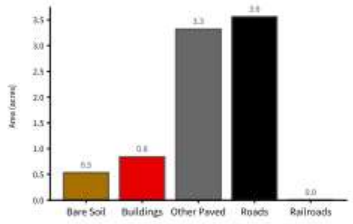
High-Resolution Land Cover Summary

Base Land Cover (Top-Down*)

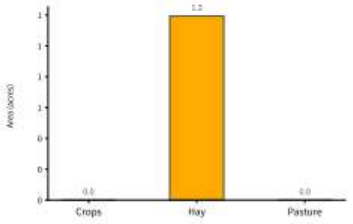


Supplemental Land Cover

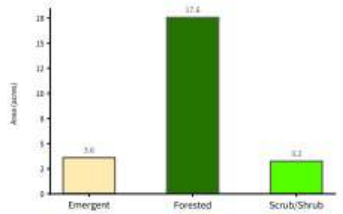
Impervious Surfaces (8.26 ac - 2.6 % of total)
(Bottom-Up**)



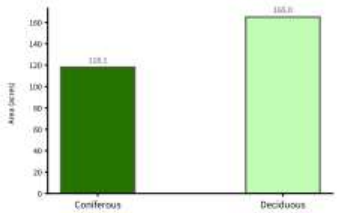
Agriculture (1.19 acr - 0.4 % of total)

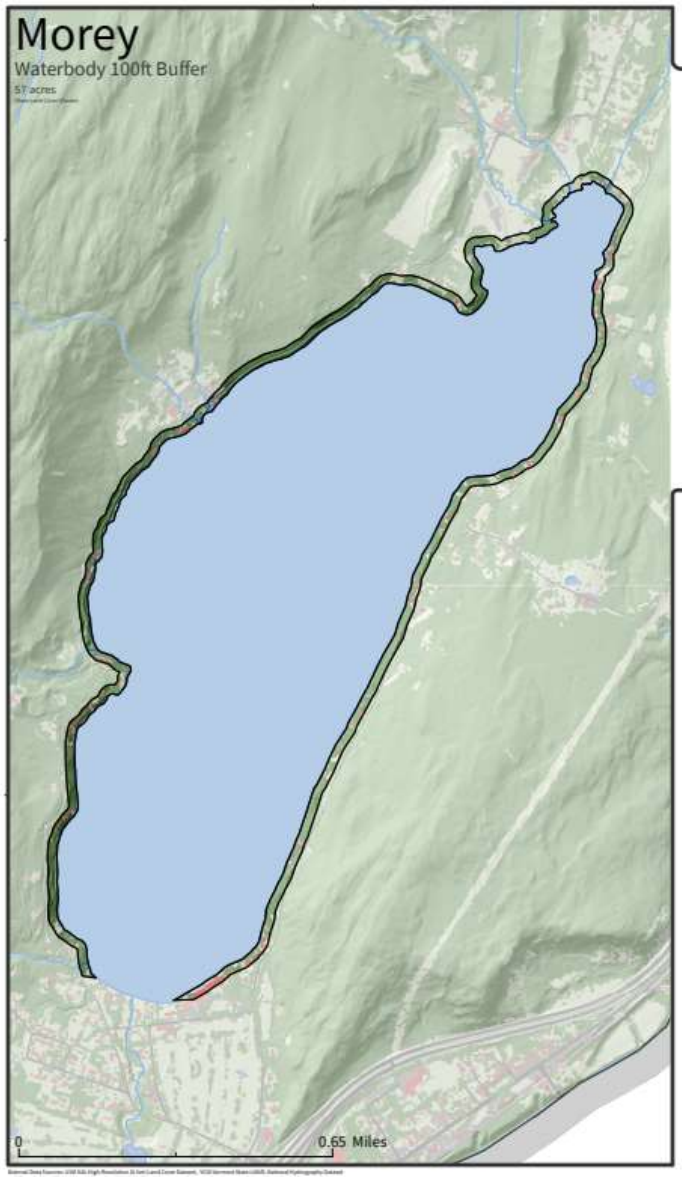


Wetlands (24.4 acres - 7.8 % of total)



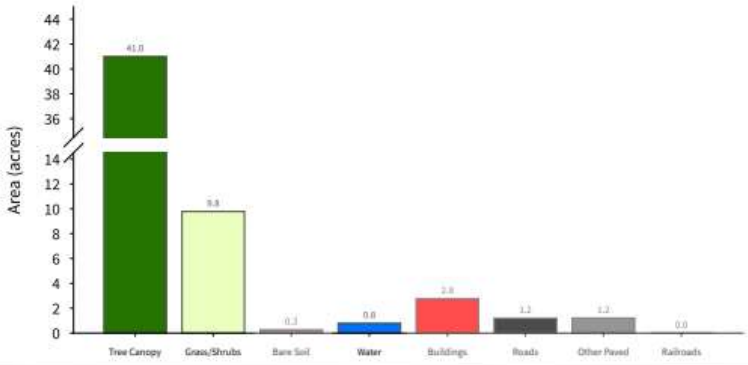
Tree Canopy (283.08 acres - 90.4 % of total)





High-Resolution Land Cover Summary

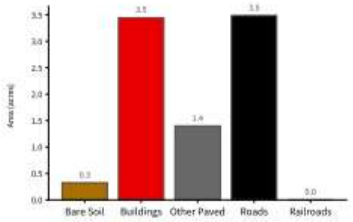
Base Land Cover (Top-Down*)



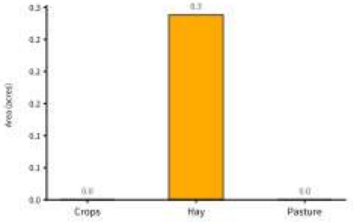
Supplemental Land Cover

Impervious Surface (8.66 acres - 15.2 % of total)

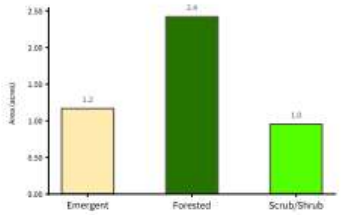
(Bottom-Up**)



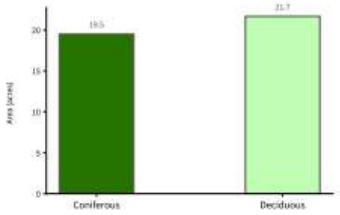
Agricultur (0.29 acres - 0.5 % of total)

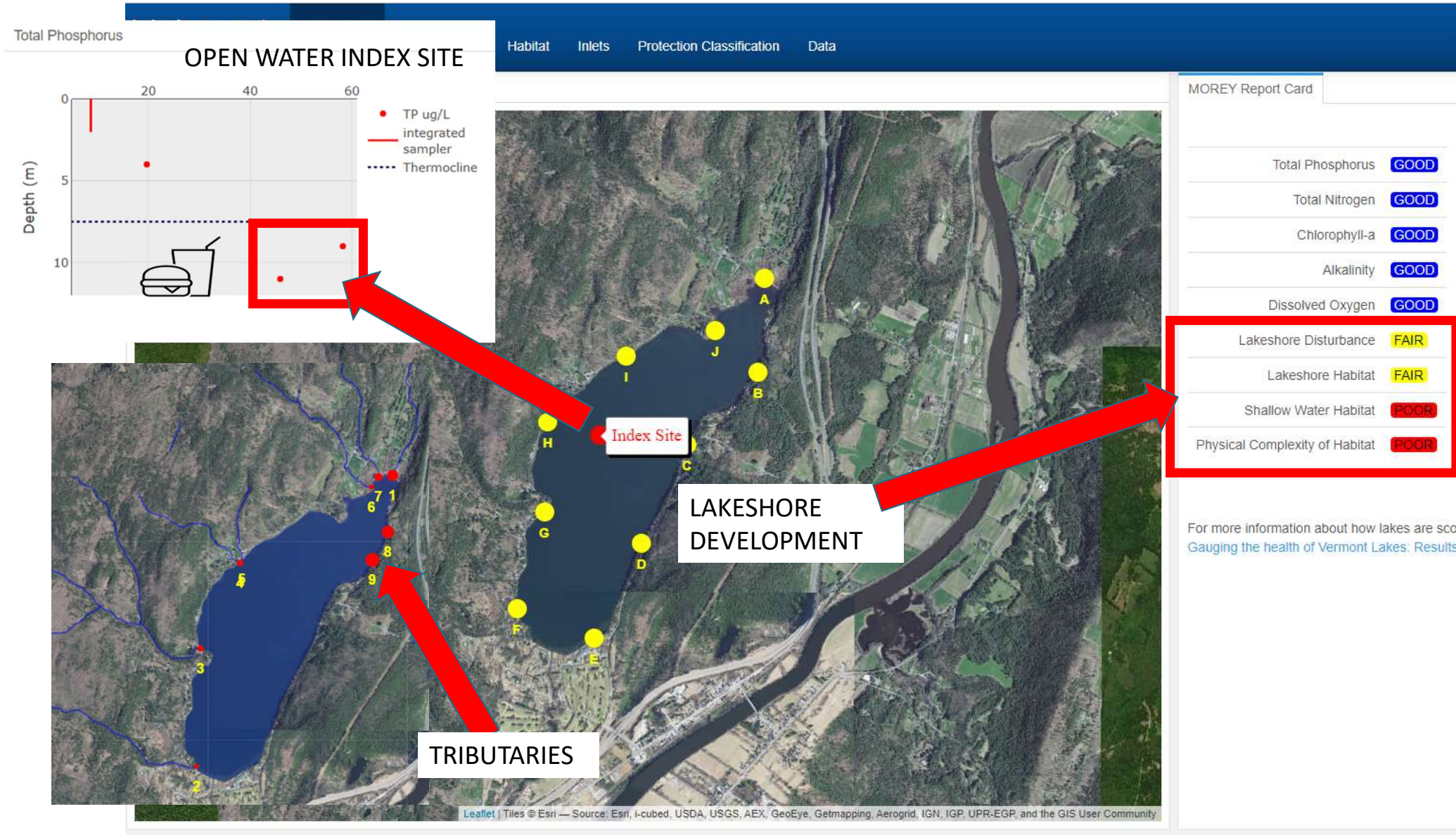


Wetlands (4.54 acres - 8 % of total)



Tree Canopy (41.16 acres - 72.2 % of total)




Total Phosphorus
OPEN WATER INDEX SITE
0
5
10
Depth (m)
20
40
60
TP ug/L
integrated sampler
Thermocline
Habitat
Inlets
Protection Classification
Data
MOREY Report Card
Total Phosphorus GOOD
Total Nitrogen GOOD
Chlorophyll-a GOOD
Alkalinity GOOD
Dissolved Oxygen GOOD
Lakeshore Disturbance FAIR
Lakeshore Habitat FAIR
Shallow Water Habitat POOR
Physical Complexity of Habitat POOR
Index Site
LAKESHORE DEVELOPMENT
TRIBUTARIES
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
Leaflet | Tiles © Esri — Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, UPR-EGP, and the GIS User Community

WCAX3

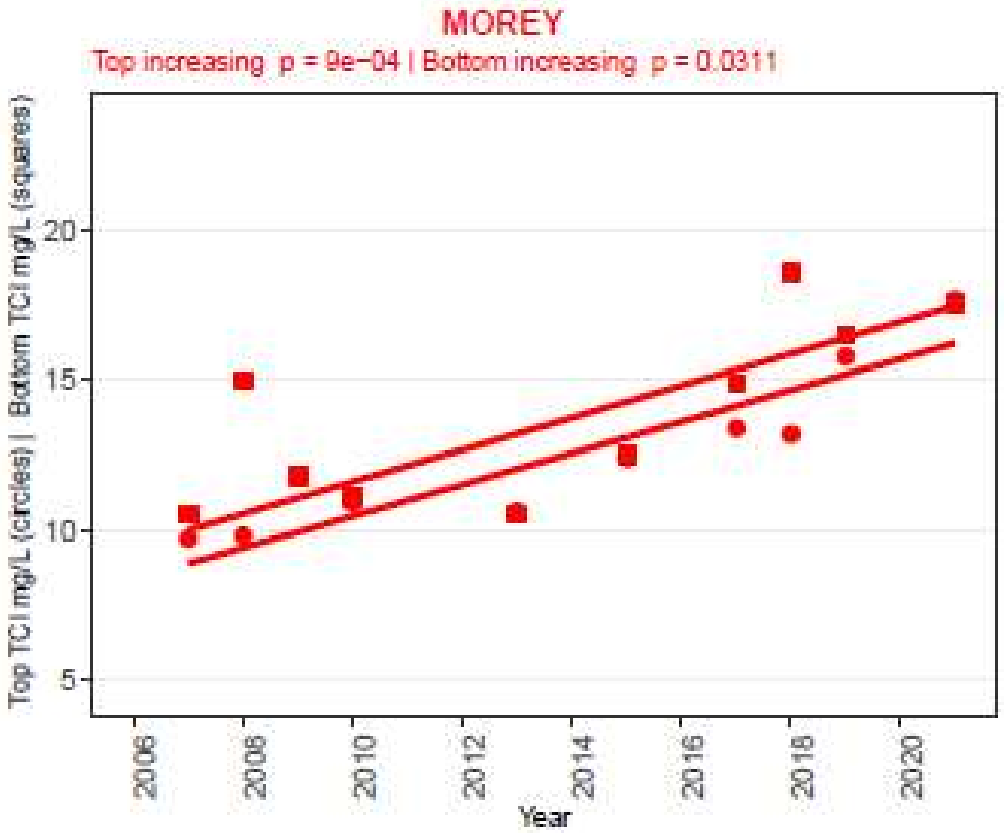
Weather COVID-19 Coverage 3 News Now Who's Hiring Livestream

5 Weather Alerts In Effect

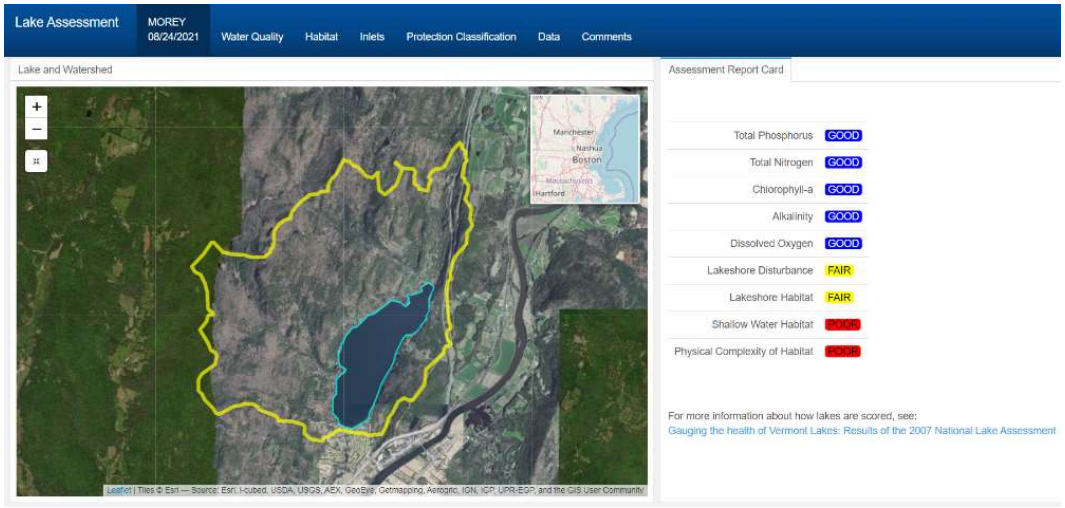
Dartmouth study finds road salt is threatening lakes in our region

By Elissa Borden

Published: Feb. 24, 2022 at 5:36 PM EST | Updated: Feb. 24, 2022 at 7:51 PM EST

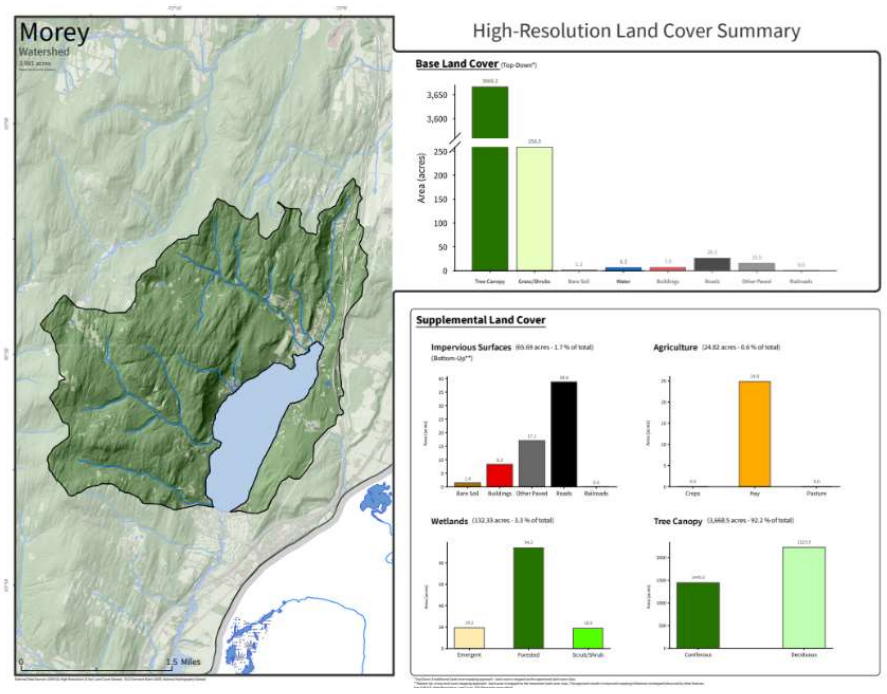


Interactive Next Generation Lake Assessment Report from August 2021 VTDEC visit, contact Kellie



High Resolution Land Cover Map

https://dec.vermont.gov/watershed/lakes-ponds/data-maps/land-cover-maps



Kellie.Merrell@Vermont.Gov

Cyanobacteria and Lake Morey

Peter Isles, Ph.D.

Aquatic Ecologist

Vermont Department of Environmental Conservation

Lakes & Ponds Program

Peter.isles@vermont.gov

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
LAKES & PONDS PROGRAM

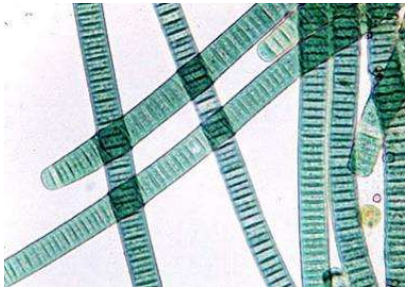
VERMONT

What are cyanobacteria?

- Cyanobacteria (blue-green algae) are unicellular, sometimes colonial bacteria capable of photosynthesis
- Cyanobacteria have been around for billions of years
- Cyanobacteria live in almost every environment on earth
- Cyanobacteria are a natural and important part of most ecosystems
- But with too much phosphorus and nitrogen, runaway growth can lead to blooms (which are sometimes toxic)

What problematic cyanobacteria are in Vermont?

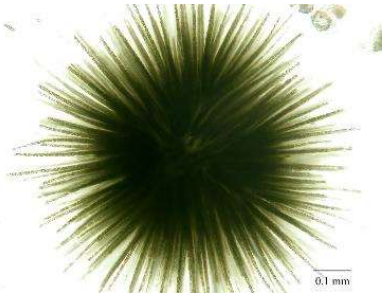
Microcystis



Oscillatoria/Planktothrix

Dolichospermum

Aphanizomenon



Gloeotrichia

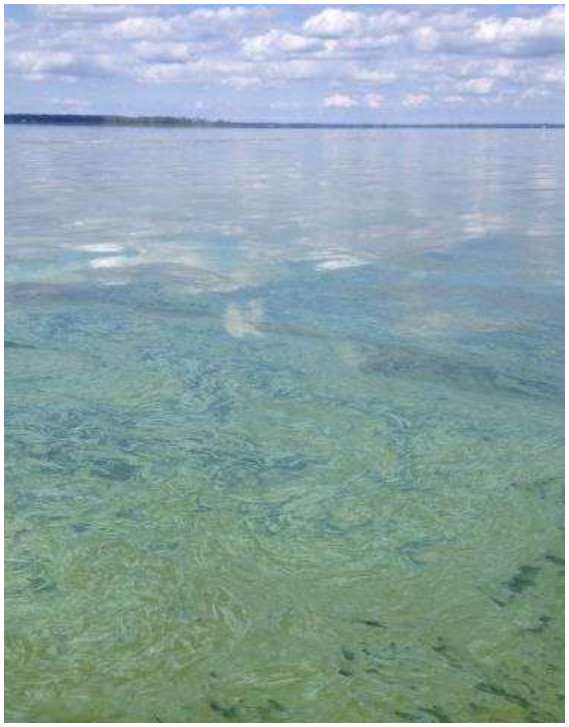
Common features: Form large colonies, most regulate buoyancy, sometimes produce toxins

How do we recognize and monitor blooms in Vermont?

https://www.healthvermont.gov/tracking/cyanobacteria-tracker

VERMONT

How do we recognize and monitor blooms in Vermont?



https://www.healthvermont.gov/tracking/cyanobacteria-tracker

VERMONT

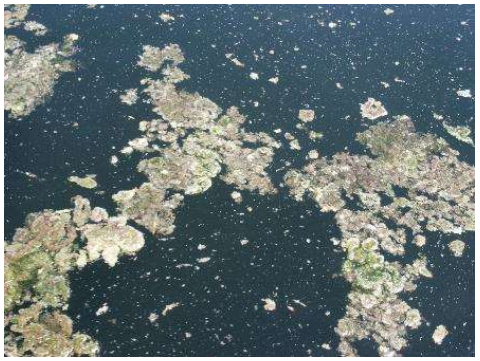
How do we recognize and monitor blooms in Vermont?

Pollen

Green algae

NOT blooms!

Cottonwood and algae



Duckweed

Duckweed

https://www.healthvermont.gov/tracking/cyanobacteria-tracker

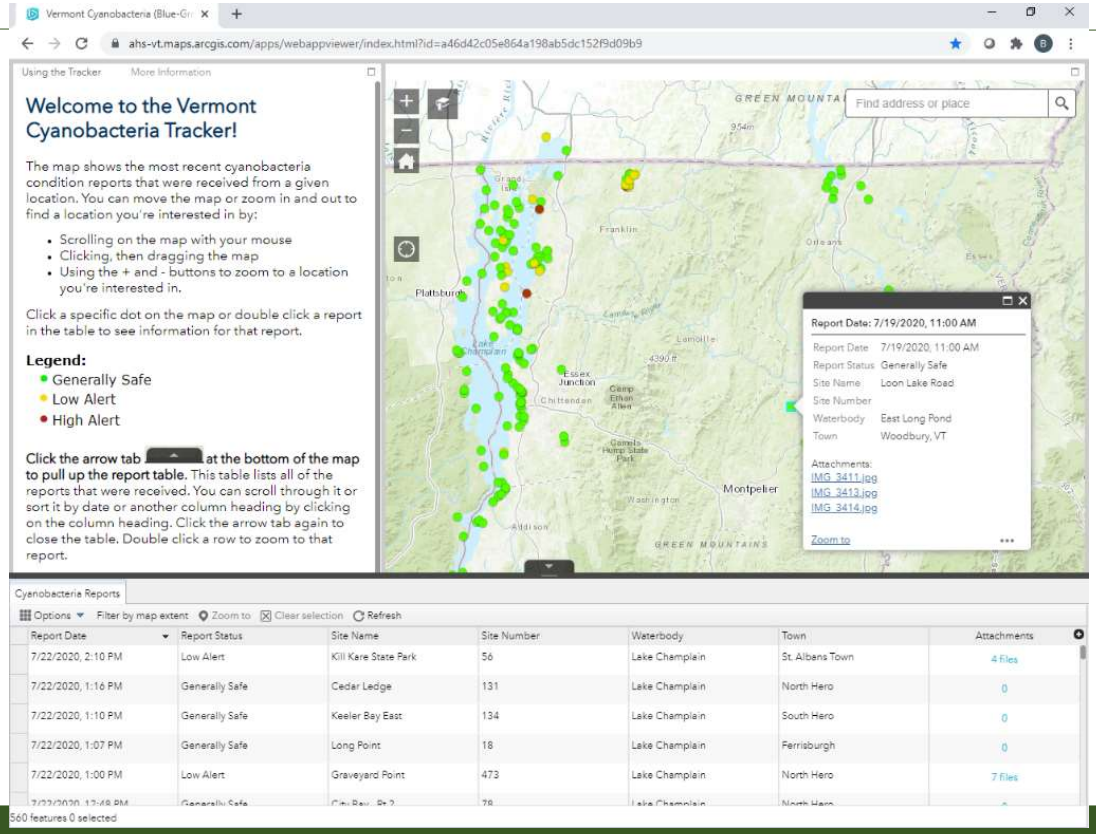
VERMONT

How do we recognize and monitor blooms in Vermont?

https://www.healthvermont.gov/tracking/cyanobacteria-tracker

VERMONT

How do we monitor blooms in Vermont?



https://www.healthvermont.gov/tracking/cyanobacteria-tracker

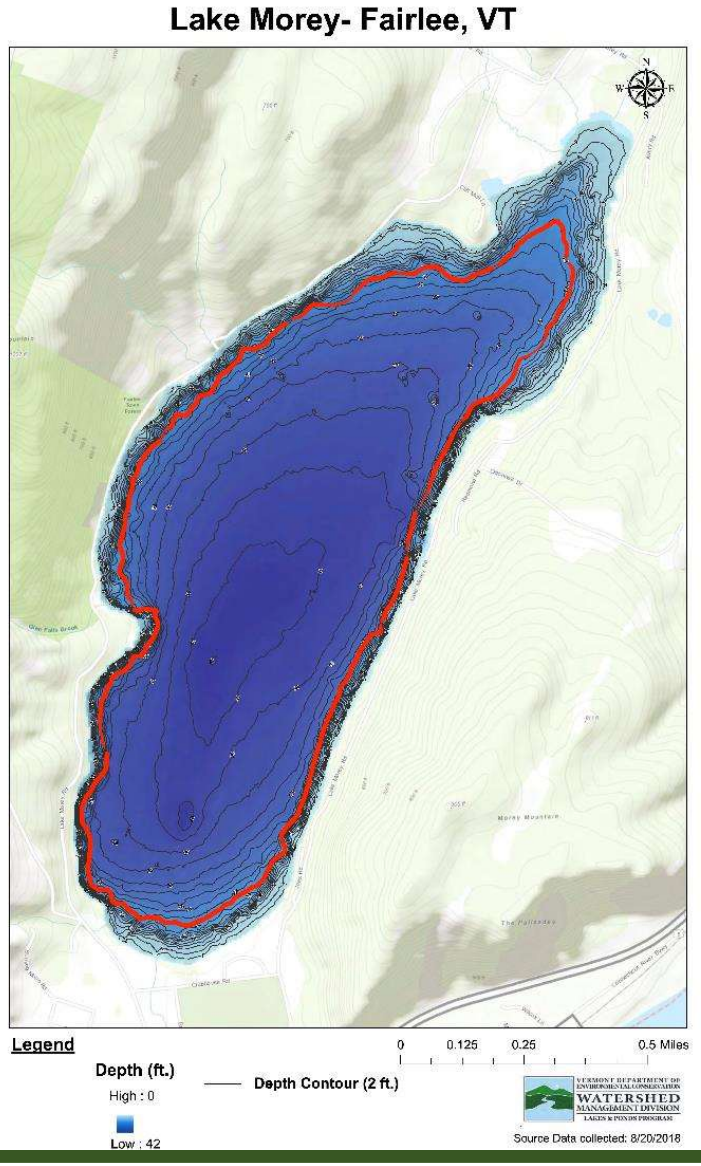
VERMONT

What is the history of blooms in Lake Morey?

- In the 1970's and early 1980's there was public concern about regular cyanobacteria blooms in the lake, with a major fish kill event in 1985 (Smeltzer 1990)
- A study was done which identified internal loading as the major immediate source of P in the lake
- This sediment P was assumed to be delivered to the lake decades earlier as a result of poor wastewater management
- Because of this, Lake Morey was a good candidate for alum treatment, which was quite effective, and the blooms stopped

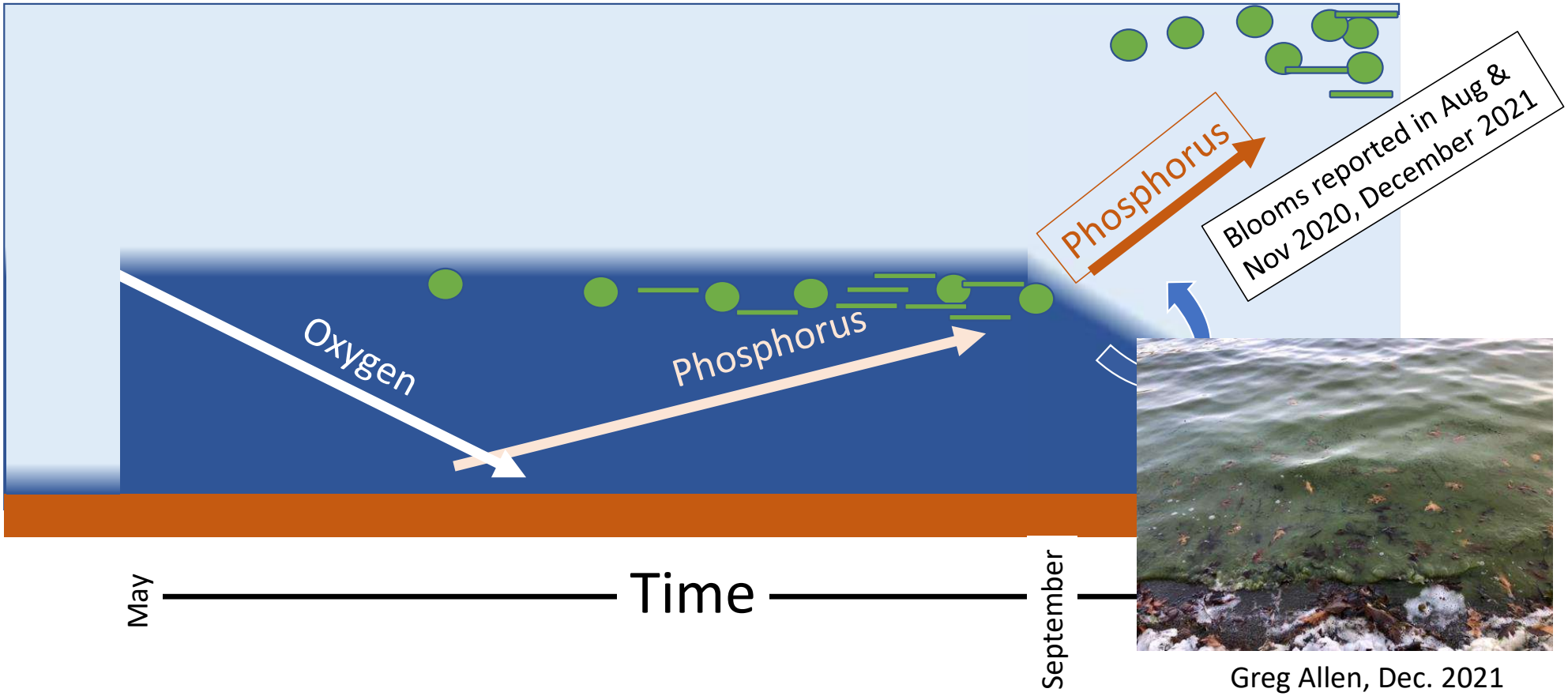
Lake Morey and internal P loading

- If internal loading is increasing again, it would be good to know why
- Lake Morey is particularly vulnerable to internal loading because of it's depth profile
  - It is relatively shallow but almost all of the lake bottom is below the thermocline
  - This means that it is easy to deplete hypolimnion oxygen, and that P released from sediments has a large impact on water concentrations



VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
LAKES & PONDS PROGRAM

Likely mechanisms in Lake Morey



Greg Allen, Dec. 2021

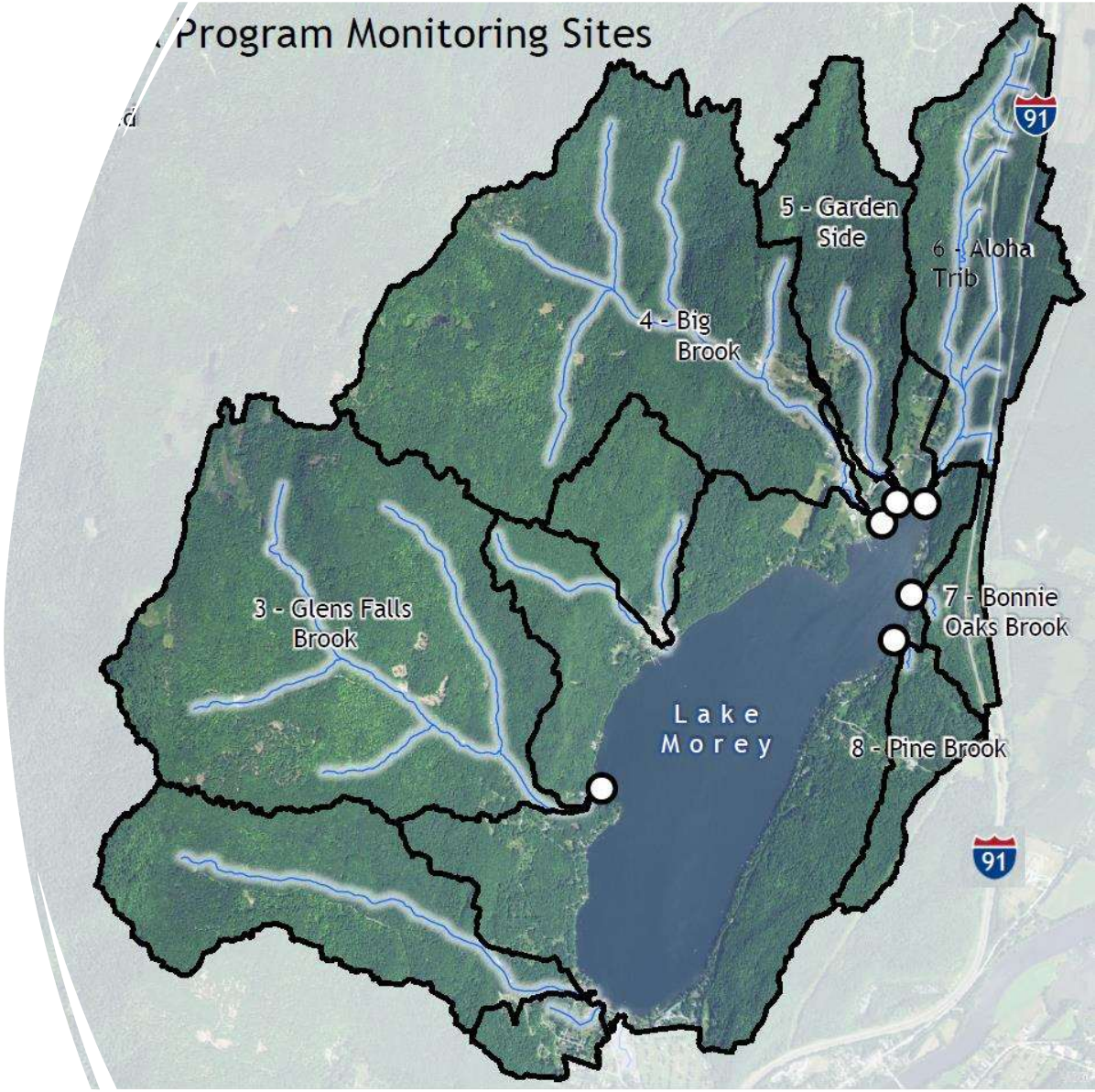
What is going on with cyanobacteria now?

- We don’t really know
- There are several recent bloom reports, but monitoring has not been consistent over time
- We could use microscopy samples to better understand the species composition throughout the year (especially deep chlorophyll layer)
- **If** P continues to increase, blooms are likely to increase as well

Questions?

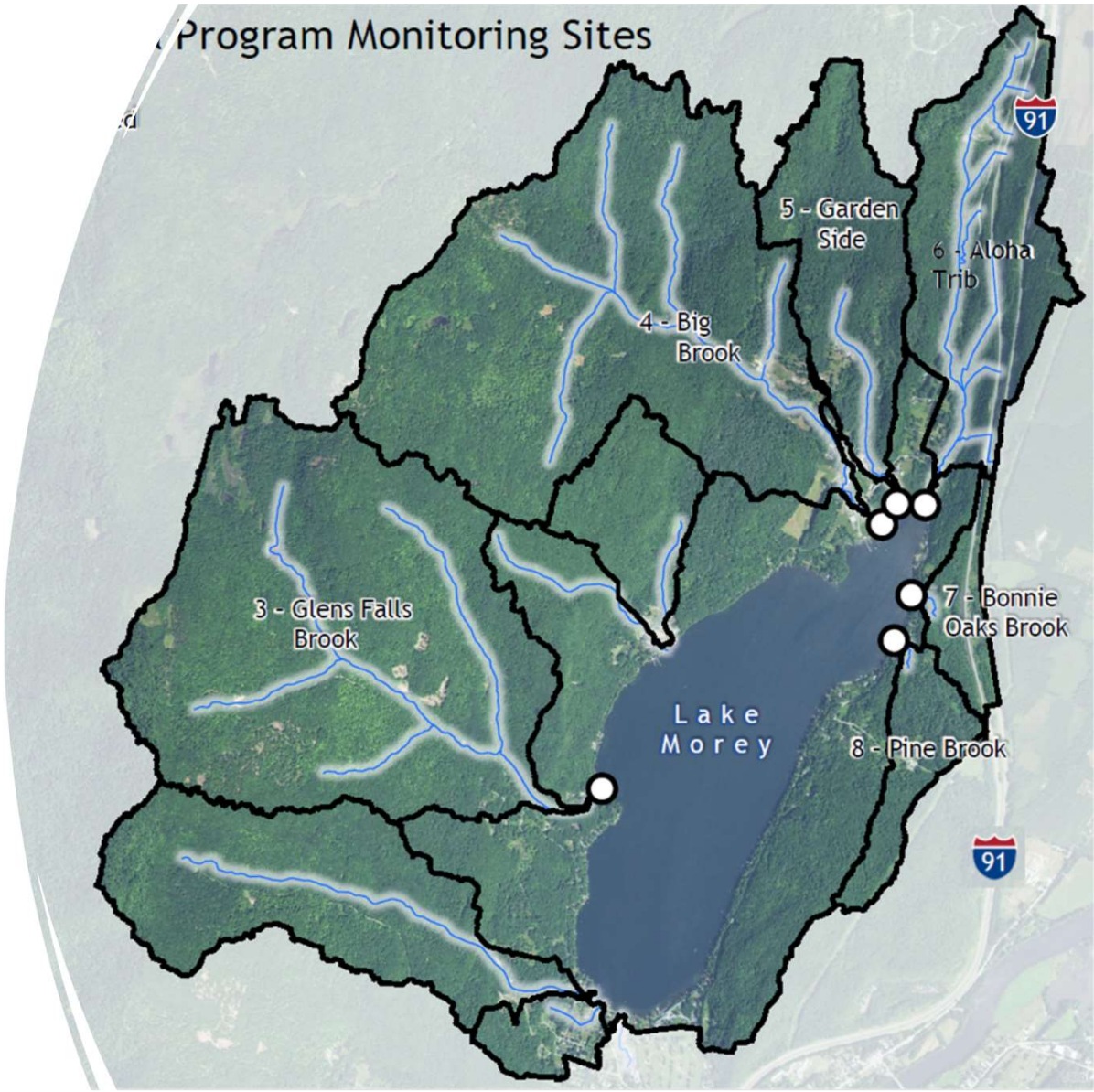
Tributary Monitoring

- Started monitoring in 2019
- Collected samples from 7 tributary streams
- Monitored June – September
- 8-10 sample events for each stream (2021)
- Watershed is mostly forested
- Developed area is the densest along the shoreline

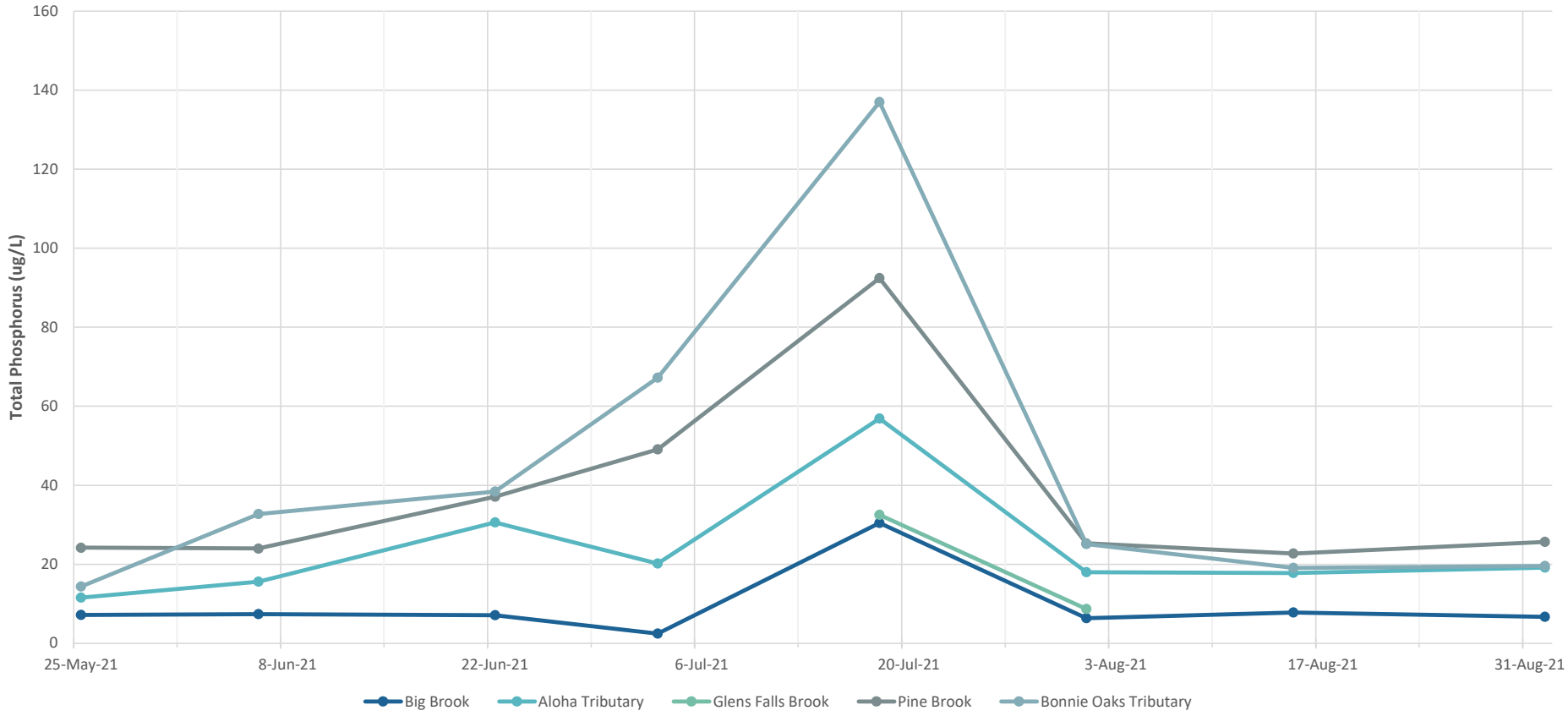


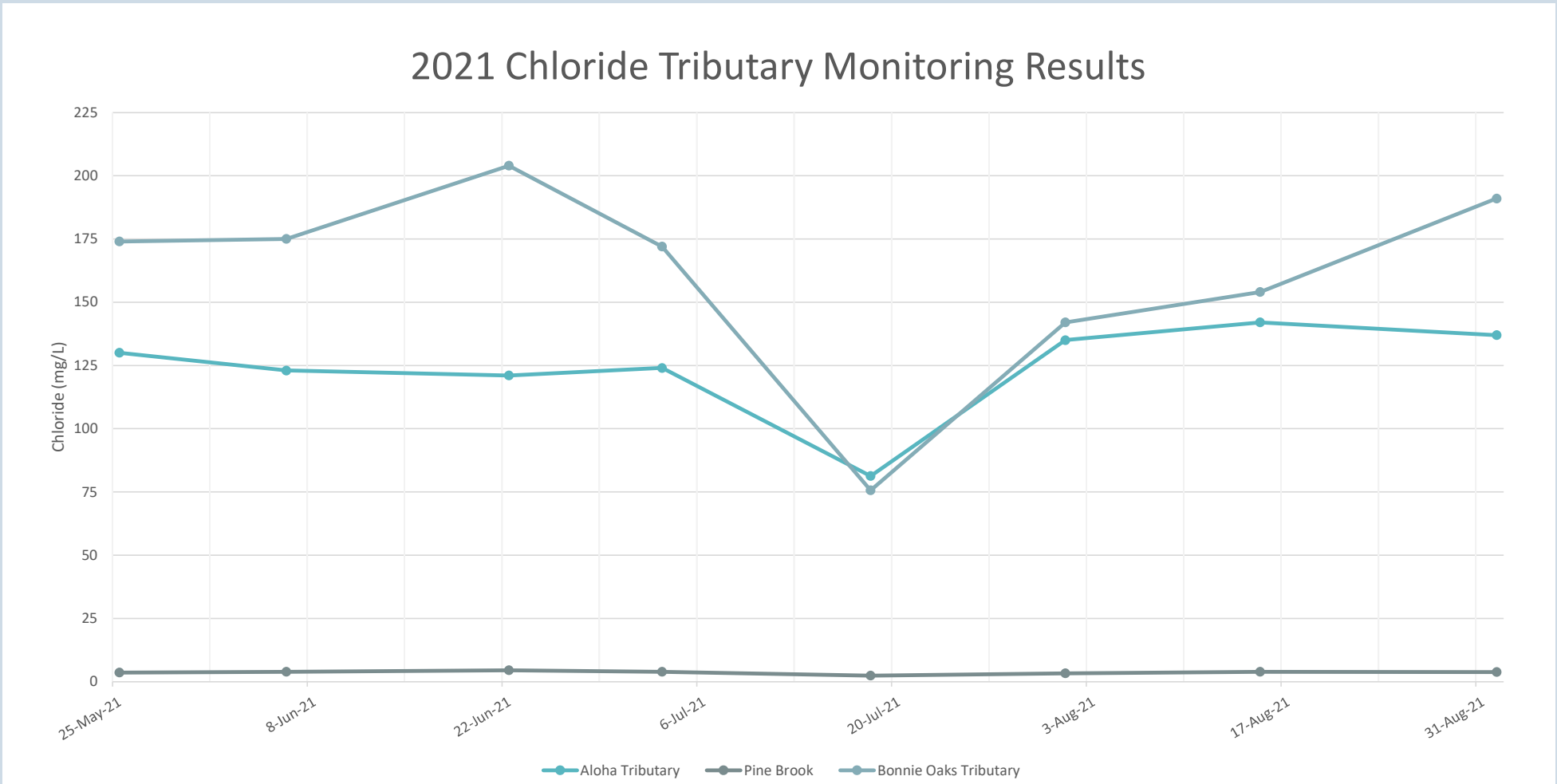
What We've Learned

- Phosphorus concentrations are highest during flow events in all streams
- Pine Brook and Bonnie Oaks followed by Aloha Tributary have the highest phosphorus concentrations on average
- Chloride and sulfate levels are elevated in Bonnie Oaks Tributary and Aloha Tributary
- Big Brook and Glens Falls have low concentrations of all parameters monitored

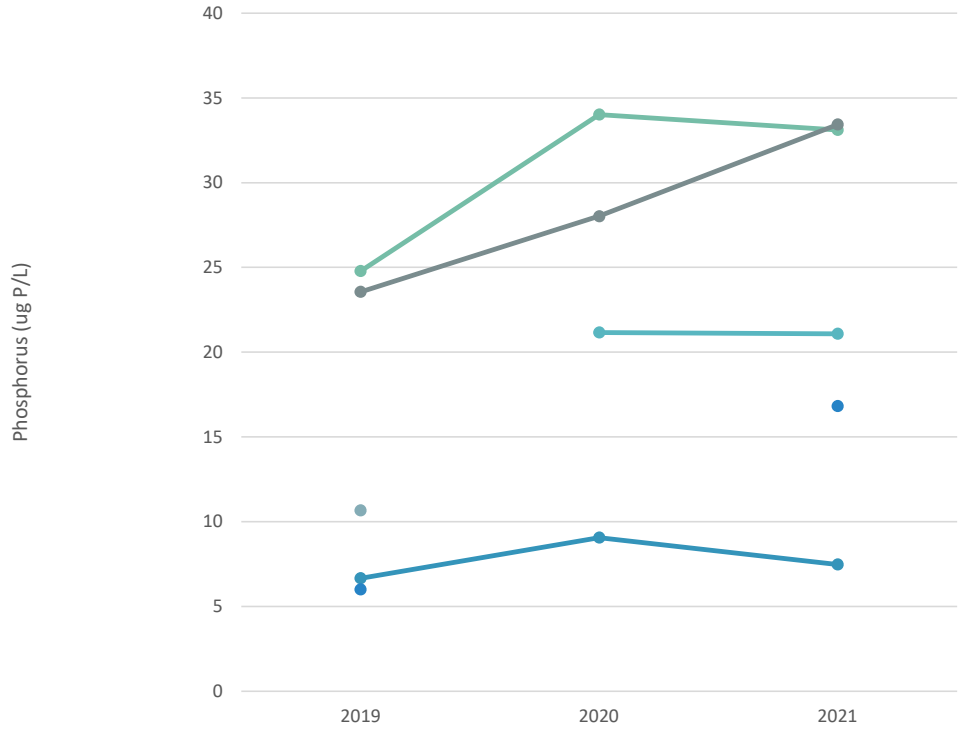


2021 Total Phosphorus Tributary Monitoring Results



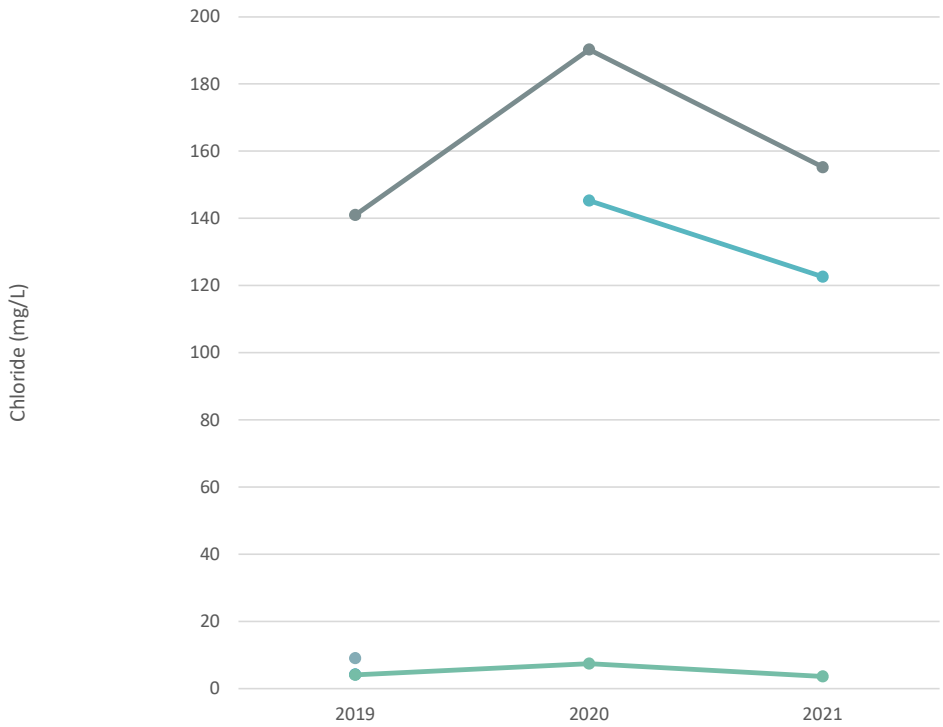

2021 Chloride Tributary Monitoring Results
Chloride (mg/L)
225
200
175
150
125
100
75
50
25
0
25-May-21
8-Jun-21
22-Jun-21
6-Jul-21
20-Jul-21
3-Aug-21
17-Aug-21
31-Aug-21
Aloha Tributary
Pine Brook
Bonnie Oaks Tributary

Annual Summer Geometric Mean of Total Phosphorus (ug P/L)

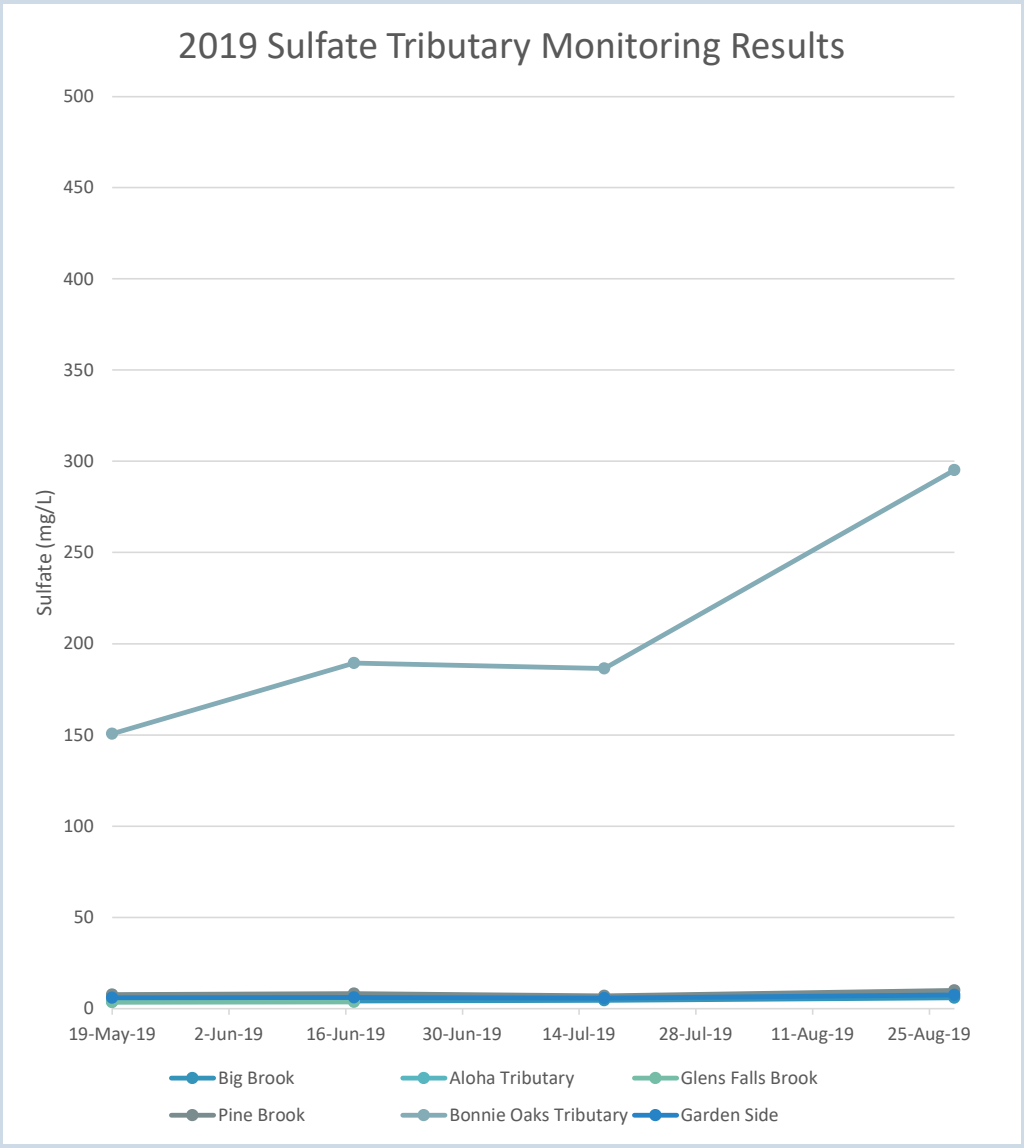


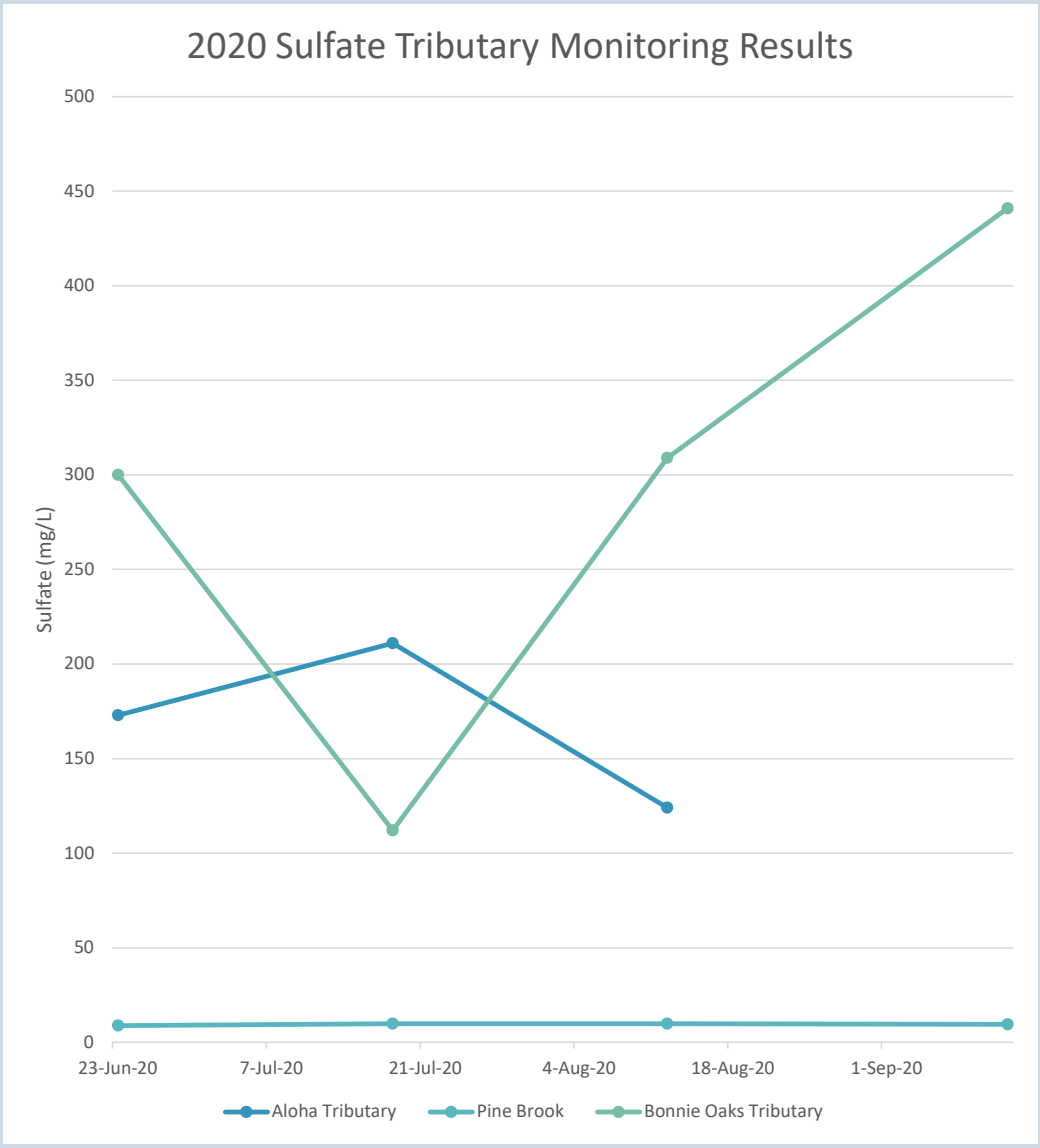
	2019	2020	2021
Big Brook	6.65	9.06	7.47
Aloha Tributary		21.16	21.09
Pine Brook	24.78	34.01	33.11
Bonnie Oaks Tributary	23.56	28.03	33.44
Garden Side	10.66		
Glens Falls Brook	6.00		16.82

Annual Summer Geometric Mean of Chloride (mg/L)



	2019	2020	2021
Big Brook	4.19		
Aloha Tributary		145.29	122.66
Pine Brook	4.14	7.47	3.61
Bonnie Oaks Tributary	140.99	190.25	155.24
Garden Side	9.03		


2019 Sulfate Tributary Monitoring Results
Sulfate (mg/L)
500
450
400
350
300
250
200
150
100
50
0
19-May-19
2-Jun-19
16-Jun-19
30-Jun-19
14-Jul-19
28-Jul-19
11-Aug-19
25-Aug-19
Big Brook
Aloha Tributary
Glens Falls Brook
Pine Brook
Bonnie Oaks Tributary
Garden Side


2020 Sulfate Tributary Monitoring Results
Sulfate (mg/L)
500
450
400
350
300
250
200
150
100
50
0
23-Jun-20
7-Jul-20
21-Jul-20
4-Aug-20
18-Aug-20
1-Sep-20
Aloha Tributary
Pine Brook
Bonnie Oaks Tributary

Lake Watershed Action Plan

LWAP is a planning exercise designed to identify, summarize, and communicate the problems and fixes within a lake watershed to best protect clean water, wildlife habitat, and the lake's ecosystem health.

DEC has issued a Request for Proposals to hire a service provider that can develop a Lake Watershed Action Plan for Lake Morey, starting later in 2022.

Recommendations

Continued monitoring through the Lay Monitoring Program, LaRosa Tributary Monitoring, and additional monitoring with SeaGrant

Community participation in the Lake Watershed Action Plan and implementation of priority actions identified

Assessment and implementation of Lake Wise at existing shoreland properties

The Three C’s